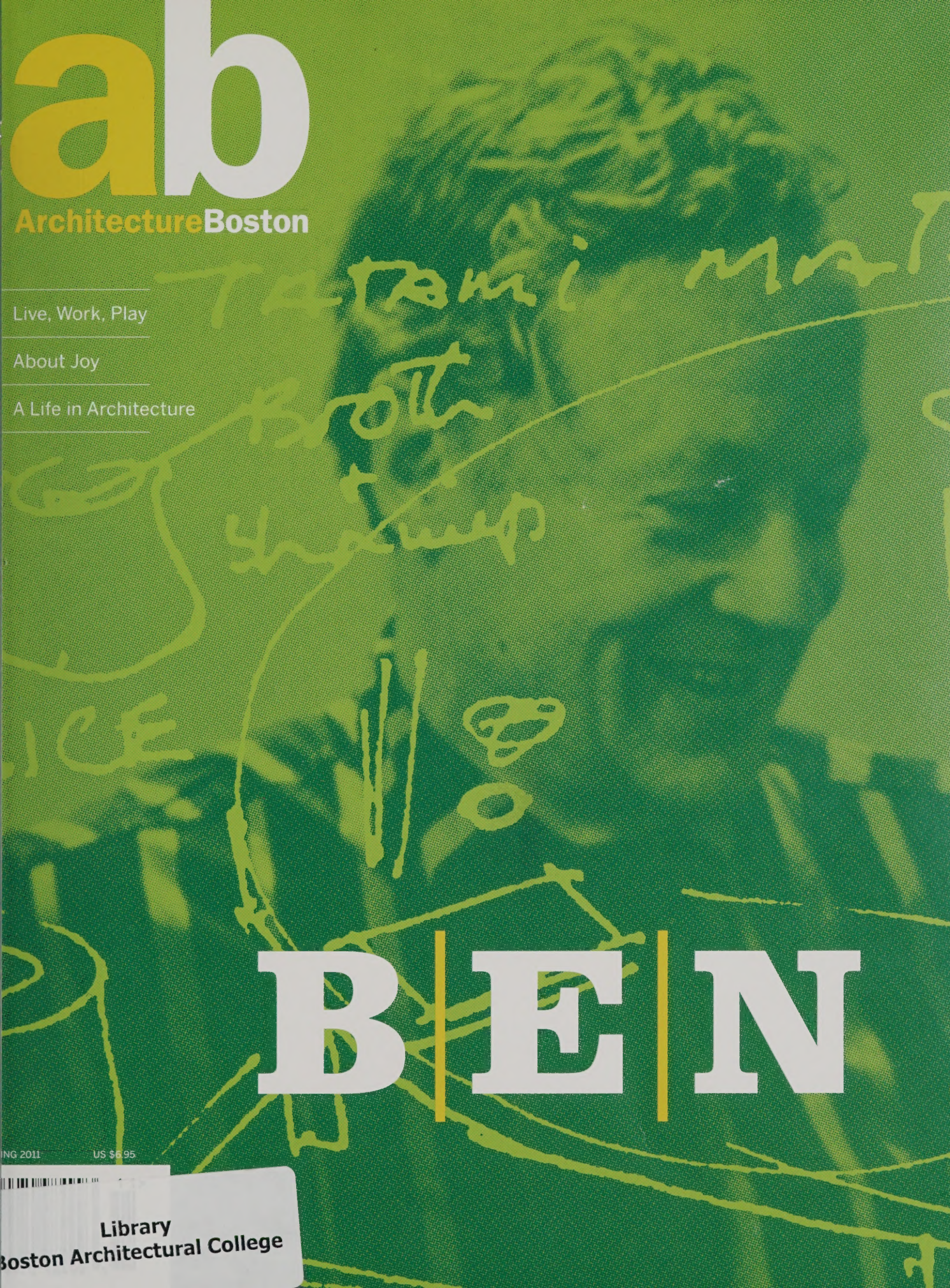

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Ben Thompson









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Ben Who?

In those days, you recognized architects by the colors they wore: anything but black. Purple bow tie? No question: an architect. Purple Marimekko shirt? An architect from Harvard Square.

And in those days — we're talking 1960s and '70s — there were lots of architects in Harvard Square; one architect remembers taping sheets of paper over the windows so the firm across the street competing for the same job couldn't see what his office was up to. Among the big names were The Architects Collaborative (TAC), Sert Jackson, Flansburgh, and Cambridge Seven.

One of the best known was Ben Thompson, a former principal at TAC who had moved just a couple of doors away when he opened his own office in 1966. He wore his Marimekko shirts with perhaps a greater ease than everyone else; his store, Design Research (D/R) — the face of design retailing that was to launch a thousand imitators — was the first to import the colorful Finnish clothing and textiles. Benjamin Thompson & Associates (BTA) attracted talented designers from around the country, who worked on an impressive portfolio of projects, including schools, theaters, hotels, and, of course, "festival marketplaces" — the concept invented with BTA's Faneuil Hall Marketplace. With the opening of the marketplace in 1976, Ben gained public recognition; professional recognition — which was continual throughout his career — was capped by the AIA Firm Award in 1987 and the AIA Gold Medal in 1992.

There are many reasons to consider Ben Thompson right now. Nostalgia is the least important of them.

Ben, who died in 2002 at the age of 84, was a postmillennial architect at heart — a man who in his aspirations, interests, and achievements would have easily passed as an archi-hipster today, but for that pesky 1918 birth date and dedication to bright colors. He readily blurred the lines dividing design disciplines, flattening hierarchies and promoting collaboration. Early in his career, he was simultaneously a practitioner, retailer, and teacher. Known as an urbanist, he was also an environmentalist. A visual thinker, he was media adept — his three-projector slideshows with music tracks were legendary, cutting-edge in their time. He embraced graphic design and typography, not only in architectural contexts but also as a branding strategy: Clarendon was the BTA typeface in a Helvetica world. The co-owner, with his wife and partner, Jane Thompson, of six restaurants, he was a foodie; the "slow" food and "locavore" movements were part of his thinking before the terms were invented. Decades before Etsy, he thought about ways to bring local crafts and products to market. He embraced product design, bringing the best of the era's furnishings and housewares to D/R and designing furniture for the store and for his projects. And he was at ease in a global economy, both as a merchant and as a designer of large projects in Europe, the Mideast, and Asia.

Ben's buildings deserve renewed attention, too. Many of his projects have entered that vulnerable phase in a building's life: neither new nor old enough to demand respect. Sometimes badly or insensitively maintained, in need of updating, energy inefficient, no longer suiting their original purpose, or susceptible to changing economics, some have been demolished, while others are undergoing renovations. They are part of the mid-20th-century architectural heritage that bedevils preservationists today.

There are many reasons to consider Ben Thompson right now. Nostalgia is the least important of them.

But perhaps the most intriguing reason to consider Ben at this time is that his work represents an alternative Modernism. Ben's was an experiential, holistic, humane Modernism, less concerned with buildings than with the people who would occupy them. If, as *ArchitectureBoston* suggested in the Winter 2010 issue, we are entering an "Un-Modern" period of questioning the assumptions of 20th-century Modernism and revisiting the roads not taken, then the moment may be right to examine an approach that has long been out of fashion in academia but that was a powerful idea in its time. "Ben was the reason I went into architecture," a prominent Boston architect said recently. "I'm not sure I would today." ■

Elizabeth S. Padjen FAIA
Editor

ArchitectureBoston thanks Philip Loheed AIA and MacGregor Freeman AIA of BTA+ and Jane Thompson AICP of Thompson Design Group for their generous assistance with this issue.



25 YEARS

build with care

architect FLAVIN ARCHITECTS *photo* PETER VANDERWARKER

Elizabeth Padjen's editorial letter "Question Authority" in your "UnModern" issue [Winter 2010] hit the mark for me. I find it rare that an architecture publication today questions, even examines, the predominant Modernist dogma. There has been much talk in music and the fine arts about moving beyond the exhaustion of Modernism and, finally, it seems many architects are feeling the need as well. Indeed, Modernism is now more than ever a dogma in which memory, history, and iconography are taboo, while at the same time replicating old "Modernist" forms — still thinking in that glass box.

If, as George W. Bush claimed, Americans are addicted to oil, then mainstream architects seem to me addicted to steel and glass, which turn out to be, as Bronski and Moe imply ["We Have Never Been *Truly* Modern"], two of the least sustainable materials we have. And as J. Frano Violich points out ["Aftereffect: The Rise and Fall of the Modern Empire"], many architects seem more obsessed with what buildings look like than how they perform. If Modernism is characterized by the "stripping away of the inessential," then who decides what is inessential: the client or the architect? Was a church, a temple, or a mosque ever just a machine for worship? Perhaps Henry Moss gets at the heart of the matter ["Pole Dancing Around the Past"] when he asks if "the underlying client for each new design is the author's conjectural future for architectural history," that old Modernist obsession of architect as artiste. If, as George Thrush claims ["Its Own Thing: China's Struggle With Modernism"], architecture should aim for cultural integration, what is, say, Zaha Hadid's MAXXI museum in Rome all about? Or for that matter, what is really more Spanish than, say, Turkish or Afghani, about the Spain Pavilion's amorphous steel frame covered in rugs?

Three of my Thanksgiving guests — graphic designers — leafing through the "UnModern" issue, seemed unsurprised, but sadly shook their heads at the buildings in Filip Dujardin's photographs. I had to tell them that they were fictional. Tells you something about how Modernist architecture is seen outside the profession today.

Vance Hosford AIA
West Townshend, Vermont

Elizabeth Padjen's thoughtful letter in the "UnModern" issue [Winter 2010] hit the nail on the head: "We now give design awards to new buildings that are … dutiful replicas of their 20th-century forebears, but with better insulation." I glancingly made this point at my recent Build Boston presentation "Designing Radically Local Buildings," where I observed that in most architecture schools, working in historical styles is strictly forbidden, except of course in the 90-year-old International Style, which is more or less required.

Although the issue's articles reflected a diversity of views on the relative merits of Modernism as a design approach, I had hoped to see a discussion of Modernism's underlying assumptions: universality, abstraction, scientific certainty, and the inevitability of progress. These assumptions trouble me, more than Modernism's impoverished design vocabulary, because they represent a particular Enlightenment worldview that I doubt most architects ever think about.

One of my particular interests has been to try to make my colleagues aware of not just the practical and aesthetic limitations of Modernism but also of its philosophical implications. As Robert Campbell once observed, "Buildings are billboards that shout the values of those who created them." I only want my colleagues to consider which values they hold before they shout them.

David Greusel FAIA
Convergence Design
Overland Park, Kansas

If photographs are "falsehoods" or lies ["Question Beauty," Winter 2010], then what are paintings, renderings, the written word, and the spoken word? Aren't they all interpretations? I was raised by artist/architect parents who encouraged me to stretch my imagination and to think for myself. Unless images or words are misrepresented, I consider them to be food for thought. Just because someone doesn't understand or appreciate a work doesn't mean that it doesn't matter or should be discredited.

I embrace Filip Dujardin's fantastical composite photographs. Dream on!

Lynne Damianos
Damianos Photography
Framingham, Massachusetts
BSA Architectural Photography Network
Co-Chair

"We Have Never Been *Truly* Modern" [Winter 2010] poses an interesting proposition: that 20th-century Modern architecture failed to realize a technical and constructive simplicity commensurate with its aesthetic achievement. Matthew Bronski's and Kiel Moe's poster children for buildings that integrate all are Gilles Perraudin's monolithic stone constructions in southern France. Perraudin's thick limestone walls (providing structure, interior and exterior finish, and thermal modulation) are compared with "complex, multi-layered building wall sections [assemblies] and … convoluted environmental-control systems" more typical of our era.

Two things should be noted: (1) Let's not confuse static and dynamic systems in our evaluation of complexity. (2) Let's recognize that bioclimatic character of place is a powerful distiller of relevant solution concepts.

A carefully layered wall assembly may be complex construction, but if it has no moving parts, therefore requiring no further input, and is guided by an experienced design mind, it will last centuries. One could argue that limestone is a similarly created product — just not of our making. The charge of burgeoning

complexity militating against a true modernity is, I think, more potently leveled against the *dynamic* building components required to maintain functionality.

What of place? Bronski and Moe yearn for a construction simplicity derived from historic vernacular. They don't specifically blame the copious energy flow-through of the past hundred years with corrupting the kind of regional evolutions that probably would have created their sense of a true modernity, but they should have. The gratuitous complexity that has risen on construction sites over the Modern period is a reflection of our high energy (fossil-fuel-underpinned) society. As we move into a post-petroleum economy, modern, intelligent, sustainable, and simpler design resolutions will re-emerge. The tragedy of Modern architecture is that it co-evolved in an era of abundant, cheap energy that disabled commitment to thoughtful, regional responses.

Bruce Coldham FAIA
Coldham & Hartman Architects
Amherst, Massachusetts

Simplification as a strategy to avoid building technology challenges ["We Have Never Been *Truly* Modern," Winter 2010] is wishful and wistful thinking. Modernity is experiencing an evolution driven by the imperative need for more energy efficiency, sustainability, and concerns over climate change, because it must. Those who resist these forces are doomed to irrelevance and obsolescence. On the other hand, those who innovate to achieve the lofty goals of a high-performance building while striving for design excellence will rise to the top: It's sink-or-swim time. From my experience, integrated design — bringing the design team specialists together in charrettes — is a highly effective process for avoiding the compartmentalization of specialties and an effective tool for communicating the project priorities and concerns among the team.

Alas, the days of three-foot-thick mass masonry walls have gone by because they occupy too much real estate and are pathetic in their performance when compared with the highly insulated "multi-layered" wall of today; let us debunk that myth, please. We must continue to push for maximizing energy efficiency, integrating the energy-consuming systems of building enclosure, structure, lighting, and HVAC, using systems thinking, and maximizing the beneficial effects of climate and site. Building science needs to enable innovation in design, provide solutions and not barriers to progress, and help guide the evolution of the new modernity to the excellence it deserves.

Wagdy Anis FAIA, LEED AP
Wiss, Janney, Elstner Associates
Boston

William S. Saunders' essay "Hasty Habits of Mind: A Lament" [Winter 2010], brief as it is, is one of the most profound and fearless critiques of contemporary architecture's intellectual culture I have read in years — an "insider's" unapologetic shot at the increasingly shallow level of today's architectural discourse without resorting to the anti-intellectual, anti-academic, Tea-Party-ian stereotypes that so often taint such criticism. The fetishization of newness may be an appropriate and perhaps unavoidable contemporary attitude in a consumerist society bored with itself, but when even in the academy the speed of thought trumps the depth of thought, we know we are headed for serious trouble. This article should be required reading for every architecture student.

Sebastian Schmaling AIA, LEED AP
Johnsen Schmaling Architects
Milwaukee, Wisconsin

Correction: Meg Landers Photography should be credited on the advertisement for Marc Truant & Associates in the Winter 2010 issue.

We want to hear from you. Letters may be e-mailed to epadjen@architects.org or sent to *ArchitectureBoston*, 52 Broad Street, Boston, MA 02109. Letters may be edited for clarity and length, and must include your name, address, and daytime telephone number. Length should not exceed 300 words.

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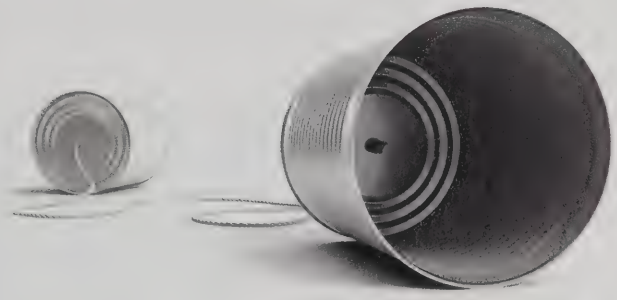
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Journeys: How Travelling Fruit, Ideas, and Buildings Rearrange Our Environment

Canadian Centre for Architecture, Montreal
October 20, 2010–March 13, 2011

Bijlmermeer petting zoos share a gallery with EU-regulated cucumbers. One wall frames (literally) definitions of "bungalow" from 1855 to 1986. A few feet away, a digital slideshow documents transnational migration between Senegal and Italy. Japanese farm tools used to cultivate crops in Bolivia encroach upon Google Earth projections of the Arctic, cross-sections of buoyant wild coconuts, and stunning Max Belcher photographs recording the translation of architecture in the American South to Arthington, Liberia.

Journeys is an ambitious investigation of the flip side of global migration — a look at its impact not on people but on places. The ideas and themes are intriguing and provocative: Soon the visitor begins to understand that maybe there really are connections between cucumbers and petting zoos.

But *Journeys* is also a far-reaching, perhaps over-reaching, exploration of exhibition-making. A collaboration among curators, authors, a graphic designer, and an artist, the project includes a website and a book. Which is appropriate, as the most experimental aspect of the installation is not its objects or images but its text.

Fifteen narratives take a cue from creative-writing teachers: Construct your essay by beginning with a concrete object and then bridge out toward the larger philosophical questions. And although each story has the potential to germinate thoughtful discussion on migration's transformative consequences, the exhibition's overall set-up and multimedia mishmash (albeit well-designed mishmash) provokes ADD-like agitation in the way of an ad-ridden, data-clogged website. Has the time already come for art museums to mimic the contemporary method of frenzied information intake? Is there a novel way we can mitigate sensory overload while providing loads of new data? I want more white space. I'm reading the book.

Online exhibition: www.cca.qc.ca.

Karen Moser-Booth is senior editor at the Boston Society of Architects

2010 Bulfinch Awards

Institute of Classical Architecture & Classical America, New England Chapter
State House, Boston
November 1–5, 2010
www.classicist-ne.org

The 2010 Bulfinch Awards are the ICA&CA's first attempt to celebrate the classical tradition in architecture. Sixteen projects, mainly residential, were recognized. Big carried the day, with residences ranging from 5,500 to 30,000 square feet. The behemoths marched over their sites with an "if you've got it, flaunt it" air.

Still, there were gems. Ivan Bereznicki's orangerie-like "Pavilion" house is a disciplined exercise in classicism. The "Champlain's Bluff" house by Polhemus Savery DaSilva presents a human scale to arriving guests. The S/L/A/M Collaborative's Church of the Sacred Heart introduces new ideas of ecclesiastical architecture with a traditional vocabulary. And Keith LeBlanc's landscape for the Lowder Brook house is a marvel of refinement.

The Bulfinch Awards program deserves applause for promoting historical precedent in architecture. But for the standing ovation that surely awaits, it must recognize more projects that embrace proper scale, siting, and the use of regional materials.

Frank Shirley AIA is an architect in Cambridge, Massachusetts, and the author of *New Rooms for Old Houses: Beautiful Additions for the Traditional Home* (Taunton Press, 2007).

Greek Revival residence by Dell Mitchell Architects. Photo © 2008 Richard Mandelkorn.



Typology Redux: Revisiting a Theoretical Framework for New Modes of Practice

Northeastern University
October 16, 2010

Typology is the study of building types — the classification of buildings by their form or use. With large-scale masterplans proliferating in the developing world and the increased densification of cities closer to home, should typology be reintroduced as a central focus of architectural theory and practice? This was the question posed at the recent symposium Typology Redux. Like many conferences Northeastern has sponsored in recent years, it focused on the architect's role in a market-driven economy.

The symposium featured three panels: pragmatics; history and theory; and hybridization of contemporary practice. The first discussion, led by conference chair Tim Love and Matthew Littell (both principals at Utile and professors at Northeastern), provided an argument for type as a legitimate focus of research, practice, and academic study. June Williamson, co-author of *Retrofitting Suburbia*, outlined suburban types and showed examples of how they have been reconsidered through adaptive reuse — as in the case of big-box retail stores transformed into libraries and even churches.

In the second panel, Alan Plattus provided a comprehensive historical overview, and K. Michael Hays delved deeply and poetically into the role of Aldo Rossi in expanding the theoretical implications of typology. They were then joined by moderator John McMorrough and Roy Kozlovsky for a lively discussion that wrestled with the architect's relationship with type.

The last session was led by Ed Mitchell, and included Xavier Costa, the founding dean of Northeastern's new College of Arts, Media and Design, Ivan Rupnik, and Marshall Brown. While intended to shed light on how — or whether — typology can again serve as a springboard for innovation, the session asked more questions than it answered. A more comprehensive view of how newer tools (e.g., landscape urbanism, performative building systems, and parametric modeling) have launched new ways of structuring form and space — and the ways in which these could be used to reinvigorate type — might have been a useful avenue of exploration.

Nonetheless, Typology Redux was a timely conference, echoing calls made by a growing chorus for a refocus on architecture, not architects. Typology, and its radical pragmatism, indeed deserves redux.

[redacted] is an architect and assistant professor at Carnegie Mellon University.



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A Day in the Life of an Icon

The building: The library at Phillips Exeter Academy in Exeter, New Hampshire. Designed by Louis Kahn and completed in 1971, the building is an icon of 20th-century architecture. Hundreds of architects visit each year, admiring its soaring, light-filled geometry of circles and squares. The central space — a hollow cube with four enormous circular cutouts revealing several floors of book stacks — is at once audacious, inevitable, and deeply peaceful. But Kahn's building is also a busy working library, housing 169,000 volumes — the largest secondary-school library in the world. It serves Exeter's faculty, staff, and visiting scholars, but its primary users are kids: a thousand students ages 14–18.

7:30 A girl with a heavy backpack is already waiting outside, shifting from foot to foot, when the custodian unlocks the doors.

7:49 A few students hunch over computer terminals, printing out papers. Someone runs upstairs to pick up books from a study carrel. A girl sits curled in an armchair, reviewing index cards.

8:04 Edouard Desrochers, the school's archivist and acting library director, looks over the day's schedule. It's going to be busy: 11 sections of Junior Studies, an interdisciplinary seminar required of all ninth-graders, are scheduled for library tours. The tours introduce kids to the library — the books, the periodicals, the technological resources, and perhaps most important, the concept that libraries offer a richness and depth that Google can't.

In 1964, Exeter's recently appointed headmaster reviewed plans for a new neo-Georgian library building. He felt the design wasn't good enough and initiated a search for a different architect. The committee interviewed several, including I.M. Pei and Philip Johnson, and ultimately chose Kahn.

9:09 Up on the fourth floor, a librarian shows a Junior Studies class items from the library's Special Collections, including a 1932 edition of *The Rubaiyat of Omar Khayyam* that measures 5 mm by 7 mm and was at one time the world's smallest book; a 15th-century French illuminated manuscript on vellum; and *Geography Made Easy*, used as a teaching text at Exeter around 1800. The kids somehow manage to simultaneously twitch, giggle, and ask smart questions.

9:45 "Help!" The library director's assistant rushes through the periodicals room, in search of the custodian. "I've got water dripping down from the ceiling into my office!" But the custodian isn't around at the moment — he had to go home briefly to let some workmen into his house.

9:47 The staff members place towels and an empty wastebasket under the leak, while Ed hurries upstairs to the bathroom on the first-floor mezzanine. The tile floor in the vestibule is flooded. Water sprays from the utility sink. The shut-off valve won't budge.

9:49 Ed phones campus security. "Hi. This is an emergency."

The assistant, back at her desk, murmurs without lifting her eyes from her work, "I'm just glad it's a sink and not a toilet."



^ Photo by Joan Wickersham.

9:58 A plumber has arrived and fixed the sink. On his way out, he passes through the little paperbacks room at the head of the stairs. "Hey, when did you move these books in here?" he asks, stopping to pull one out and flip through it.

10:35 Another Junior Studies tour. Fifteen ninth-graders turn their eyes upward as the librarian mentions that the big X structure of the roof contains 175 tons of concrete. "Don't worry, it's securely anchored up there." He tells them the building is a masterpiece, "In fact, it was on a postage stamp."

Nearby, the custodian dusts surfaces. A librarian sifts through the browsing racks near the circulation desk.

10:50 Up in Special Collections, a Junior Studies teacher has a question. "Is it true that an alumnus walked in and said, 'I have a gift for the library,' and it turned out to be a second folio Shakespeare, wrapped in a tea towel?"

"It's true," the librarian answers, "though I hadn't heard about the tea towel."

11:05 On the ground floor, contractors are installing security equipment that will operate in the event of a campus lockdown. Yesterday, they installed wiring on one of the main doors; today, they prepare to drill around the second entrance.

11:18 Ed comes downstairs to meet his next Junior Studies tour and sees the new electrical housing above the doorway: bright white and clumsy-looking against Kahn's dark brick. He points to a recessed concrete channel. "Couldn't the housing have been put in the reveal?"

The contractor shakes his head. "Too big. Wouldn't quite fit."

Ed will call the school's facilities manager to request that the housing be painted.

Answering the school's programmatic goal that "a reader ... be able to sense at once the building's plan," Kahn conceived the great central space as a hall of knowledge. A student could see the expanse of books upon entering, make a selection, and then retreat to a private place sheltered by the brick walls that wrap around the central core like a built ruin.

1:11 The library is quiet. On Floor 2, sunlight floods in through the windows in the white-oak study carrels set along the outside walls. Three girls sit at a table, studying together. Piles of books and notebooks, Machiavelli, a yellow highlighter.

1:15 In an empty carrel, a little stack of old books with faded gilt-printed spines: Thucydides, Herodotus.

1:31 In the second-floor ladies' room, two sinks that don't match, two faucets that don't match, two soap dispensers that don't work. This building, whose public spaces reflect such careful stewardship, aches a little in private, feeling its age.

2:40 A Junior Studies tour. Another class of twitching, shifting 14-year-olds. The librarian: "And over there are the reference books. Can anyone tell me what a reference book is?" No one answers. Someone yawns.

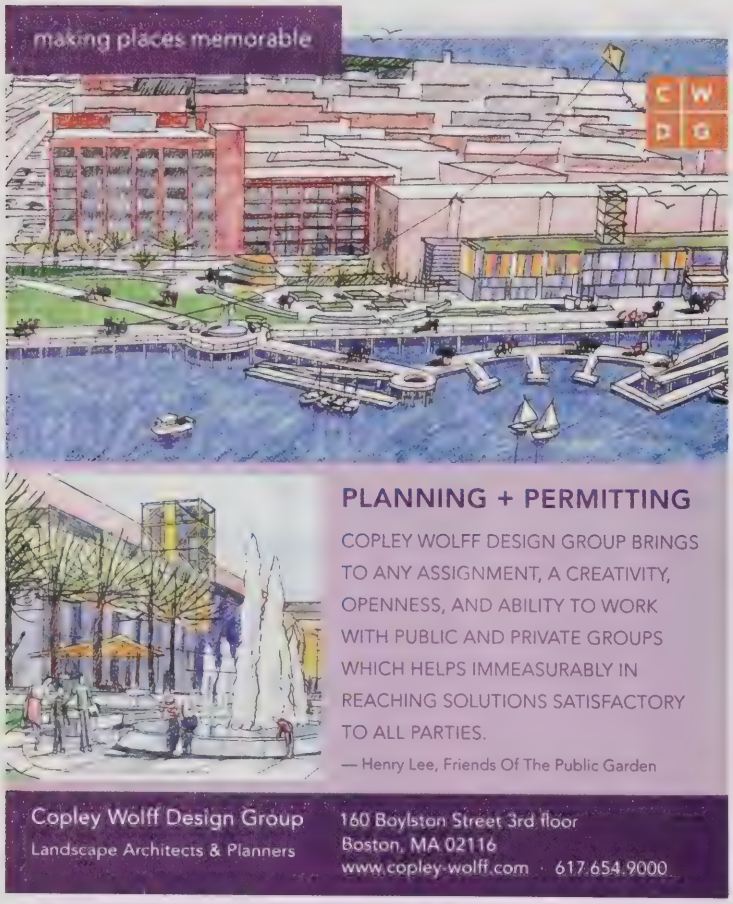
On November 16, 1971, the school suspended classes so that the books could be transferred from the old library into Kahn's new building. The students lined up, forming a human chain, and passed boxes of books from hand to hand.

4:06 Another Junior Studies tour. The librarian explains that because the school hadn't gone co-ed yet in the late '60s, Kahn's design included only one bathroom per floor. When Exeter admitted girls, the school didn't want to add new bathrooms, and decided to alternate, designating a women's room on every other floor. "So you see, you plan for what you think is the future, and then it all changes."

4:25 The librarian points out the microfilm-viewing machine.

"Did that come before the floppy disk?" a kid asks earnestly.

4:29 The tour has reached the ground-floor periodicals room, where a group of





well-dressed alumni are chatting over tea. "That's what you're going to be like in 50 years," the librarian murmurs as the ninth-graders file into the room, "so be kind to them."

4:40 Ed takes the alumni group on a tour. The route is the same as the Junior Studies tour, but the group's questions are different. A lot of them are about money: how much the library cost to build and what it costs to run.

8:22 Lights blaze from all the windows. Inside, people are studying everywhere, alone and in groups. On Floor 3, the blue couches in an open lounge space are crammed with kids. One boy ends a phone call and turns to his friends. "She's coming over to work."

Another boy: "Do you think she's hot?"

"Well, if she threw herself at me, I'd — um —"

"You wouldn't say no."

"But I hope she's coming over here to work," the first boy says anxiously, "because I really do have to work."

9:12 One of the librarians takes the elevator up to the fourth floor to start the final evening walk-through. She locks the Special Collections room, the Lamont poetry room, the stairwell door.

9:15 Down the stairs to Floor 3M, where she walks around the periphery. It's silent except for her hushed footsteps on the carpet.

9:17 Floor 3. A boy and girl close their books as the librarian walks by.

9:19 Floor 2M. Another boy and girl in a carrel, packing up papers.

9:21 Floor 2. Three girls packing up.

9:23 Floor 1M. The corridor, the bathroom that flooded, the little paperbacks room where the plumber stopped to look at a book. The ritual circling of the walk-through has a *Goodnight Moon* feeling — a last look at all the sites of the day's activities, gone quiet now.

9:25 The basement. The librarian opens the door of one of the old typing rooms — no one even remembers now that this was what these little enclosed rooms were designed for — where a boy in earphones is oblivious to sound and the passage of time. "We'll be closing in five minutes."

9:29 A great buzzing thud as all the lights in the stacks go out. The great cut-out circles are black. Sneakers squeal across the travertine as the last few students leave. The librarian looks at her watch.

9:30 Another huge buzz and thump. The central space goes dark. The rich content of the library is erased. Now, in the dark, the space is about emptiness. The building has transformed itself into Kahn's original concept of a ruin, a place of vastness and shadow. ■

A note from Joan Wickersham: With this story I am wrapping up *The Lurker*, the column I have written for *ArchitectureBoston* since 2004. I have loved writing these pieces and thank you all for reading them! www.joanwickersham.com



Architectural legacies are unpredictable. For one thing, there are no guarantees that a physical legacy will endure. In the first half of the 20th century, as the profession of architecture grew in stature, the field had appeal for anyone with an immortality complex: a significant commission had staying power. In the age of the tear-down, however, there are no assurances of permanence when even office towers and museums can be demolished to make way for the next new thing.

Even those structures that do survive are subject to changing interpretations, passing in and out of fashion. A few buildings are so extraordinary that their iconic status endures, their initial innovation still apparent. Some suffer from the flattery of imitation, blanderized by their own success. (How many visitors to the Hyatt Regency in Atlanta know or care that it was the first atrium hotel, designed by John Portman in 1967?)

But an architectural legacy is not necessarily a constructed legacy. Some buildings launch ideas that are more fully or more successfully developed later in other projects. Some lead to a new direction in the architect's career and work. And some serve as reminders of a road not taken — an architectural direction abandoned due to economic, political, or cultural forces.

The projects included in the following sampler of Ben Thompson's work suggest the range of his considerable influence and represent different aspects of his architectural legacy. What they have in common is a more ineffable legacy — their influence on the people who worked on them, who have occupied them, and who have delighted in their generous contributions to the communities in which they were built.

— Elizabeth S. Padjen FAIA

The Thompson Sampler

Five buildings, five views of an architectural legacy.

Right: Ben Thompson at 40 Moon Hill Road, photographed with an Albini chair for a 1962 *Look* magazine story on Design Research. Photo by Phillip A. Harrington. Opposite page: drawing by Ben Thompson.



40 MOON HILL ROAD
Lexington, Massachusetts

It was perhaps the worst building Ben Thompson ever designed. The roof leaked. The house was drafty. There was no privacy. Form did not follow function. I should know. I grew up there.

My parents, Ben Thompson and his first wife, Mary, built the house in 1949 and 1950. There they raised five children: my sisters Debby and Marina, brothers Nick and Ben, and me. Despite my current views of the design, it was a magical place to spend my youth. I loved living there.

The time was the post–World War II baby boom, when Walter Gropius (everyone called him "Grope") was mentoring his seven young partners in The Architects Collaborative (TAC). Driving up Moon Hill Road, past the common land and swimming pool, were the homes of TAC founders Chip and Sally Harkness, Norman and Jean Fletcher, and Bob McMillan. The road swarmed with children biking, roller skating, playing capture-the-flag. At the end, just off the cul-de-sac, our house sat perched on a rock outcropping with an expansive view south across woods and meadows. This was my father's first experiment in residential design.

The house felt like one big room — a big flat-roofed box made of Philippine mahogany and glass. Inside the front door was an expansive two-story space, which served as the dining room and sometime drafting studio. From there, you could see into almost every room in the house, including bedrooms and bathrooms. Noise carried unimpeded throughout our home, upstairs and down.

A floating teak stairway, without risers or handrails, was the first architectural element to greet you, launching dramatically (and perilously) toward the second level. At age two, I tumbled head over heels down those steps, prompting the babysitter to pronounce me dead.

The two-story space was illuminated by an Akari paper lantern hung from the ceiling; a huge freestanding fireplace was the focal point of the house, showcasing modern sculpture and paintings. A Calder mobile swung silently in the air between stairway and chimney. You could reach out and touch it as you walked down the steps.

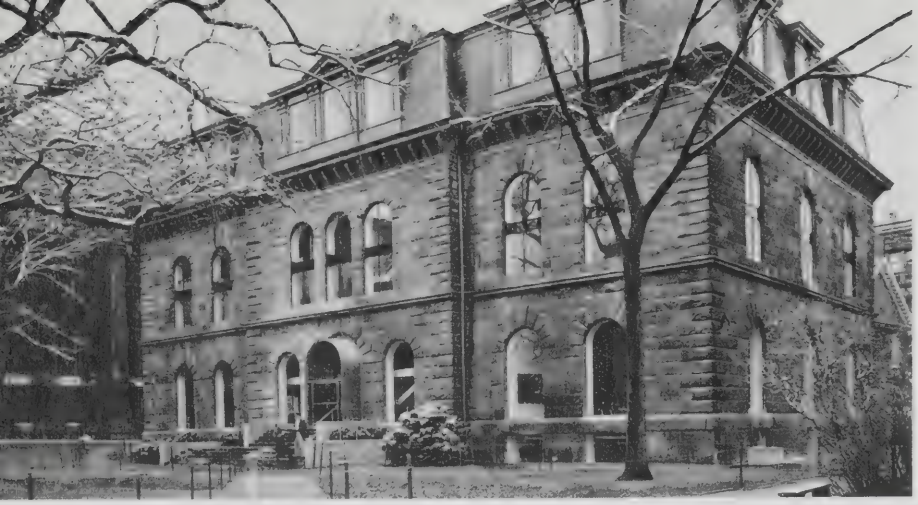
Often on Thanksgiving, Grope and his wife, Ise, drove from Lincoln for dinner. At Christmas, they returned bearing gifts and watched my brothers chase each other around the fireplace on tricycles. Debby, Marina, and I hung by our knees from the underside of the stairs, feet and legs threaded through open risers. These were wonderful times for our family on Moon Hill.

In 1953, when my father and Spencer Field started Design Research (D/R), the store's purpose was to meet the furniture needs of Modern architecture. But D/R expanded into a lifestyle, while our house became its testing lab, changing with each revolving crop of chairs, tables, beds, and colorful textiles. My parents traveled regularly to find new inventory, returning to Moon Hill with suitcases filled with beautiful products from around the world. Dad designed furniture as well: tables on wheels, butcher-block benches, and his well-known Haitian-cotton couch. In the late 1950s, they came back from Finland with Marimekko. They immediately built a sauna in the basement, and this began a grand family tradition of bathing together. It shocked our friends, but we enjoyed it.

Eventually, my father's strong entrepreneurial spirit and individualism took him in a direction different from that of his TAC partners on Moon Hill, who dreamed of a world of communal housing and social responsibility. Dad, though he continued to practice the full scope of architecture, had discovered a lasting inspiration in retail and commercial design. In late 1965, he departed Moon Hill and moved to Harvard Square; he left TAC the following year and formed Benjamin Thompson & Associates (BTA). Although he went on to design more residences, he never again created a house like ours on Moon Hill. Perhaps he ultimately found, as I do now, that its striking but minimally utilitarian design was better left to the past.

Anthony Thompson lives in Washington, DC. He wishes to acknowledge the editorial help of his sister Marina Thompson, who resides in Lexington, Massachusetts.

1949–50



Boylston Hall after its 1959 renovation.
Photo courtesy Harvard News Office.

BOYLSTON HALL, HARVARD UNIVERSITY

Cambridge, Massachusetts

When Ben Thompson, then a principal of The Architects Collaborative, remodeled Harvard's Boylston Hall in 1959, it had already undergone a century of expansion and renovation. But none of the previous modifications was as startling or influential as his thoroughly Modern approach.

Originally designed by Paul Schulze as a chemistry laboratory and museum, Boylston Hall was built in 1857 in an Italian Renaissance style. In 1871, Peabody & Stearns topped the Italian palazzo base with a Second Empire mansard story, providing an additional floor. Over the next 50 years, the building was renovated several more times.

In 1959, Harvard hoped to build a center for the study of modern languages on the site of Boylston Hall but was constrained by the terms of the donor's bequest from razing the antiquated building. Charged with remodeling the structure, Thompson faced an ambitious task, requiring a 40 percent increase in floor area.

Unlike Peabody & Stearns, Thompson and his team intended to transform the building from the inside. The solution was to insert new floors into the monumental floor-to-floor heights of the original building — in effect, inserting a new office building into the historic structure. Two principles of European Modernism were well suited to this problem: the "free plan," a floor plan that serves as a neutral canvas; and the "free façade," a building enclosure that is untied to the organization of the interior space. But the Boylston "free façade" was not a Modern construction at all; it was instead the historic granite mass.

The architects showcased their Modern interior through sheets of glass fitted to the stone openings with minimal steel frames, inventing a new window system incorporating a spandrel panel to accommodate the new floor level and a minimal vertical mullion to allow office partitions to be framed to the center of the window openings. This treatment radically transformed the architecture of the building.

The appeal of the design was immediate. First, in an environment in which tradition was revered, it had a refreshingly subversive quality: the new design brilliantly opposed the restraints of the building's history and multiple styles. Second was its utopianism. New office floors replaced the historic stair hall and chambers with neutral space; people animated the building. Third was its assertion of flexibility; its repetitive elements offered an aesthetic of systems design that was synonymous with the Modern Movement.

Thompson's solution is still powerful because of its unspoken connections to the traditions of American Modernism. Providing views to the interior was a generous act of openness unique in Harvard Yard, where buildings were typically shuttered by the grill-like character of historic windows; it continues to be an invitation to engage in the building. The drive to reduce and simplify, dramatized in this design through the geometry of wall and void, is a fundamentally American impulse at the root of this country's embrace of Modernism; here was a historic building that was suddenly spare and abstract. Finally, Thompson's precise aesthetic reveals a reverence for craft as a fusion of beauty and usefulness; historic granite and modern glass are valued equally and brought into a harmony independent of traditional styles.

Ben Thompson's work evolved from these qualities of engagement, abstraction, and craftsmanship by always transforming problems into aesthetic opportunities. His was the anti-authoritarian world of the craftsman and artist who builds with material fact, speaks of common life, and invents from necessity. Thompson's work was cool in the '60s because it reflected the aspirations of its time. The lesson of Boylston Hall today is a vision of tradition invigorated by modern life, of past and present beautifully joined in the contrast of the abstract order of its architecture and the emotional impact of stone and glass.

Robert Olson AIA is the principal of Robert Olson + Associates in Boston, which completed an extensive renovation of Boylston Hall in 1998.

DESIGN RESEARCH
Cambridge, Massachusetts

1965–68

The Design Research building has won architecture's highest honors, yet it is rarely discussed purely as an architectural icon; conversations usually include a stew of memories from the D/R retailing story that birthed it: loving Marimekko; watching the people, products, and activity from the outside in; discovering a store that felt like a party everyone was invited to.

Ben wouldn't have had it any other way.

"Any architecture must be secondary to people."

When I worked at BTA, I was swept up by Ben's humanist approach to design. To him, architecture was a backdrop for the living of a joyful and dynamic life; he had little interest in the creation of architectural masterpieces. D/R was designed to serve other passions: the seduction of "must have" merchandise, the buzz of a bustling market, the poetry and energy of movement.

A "non-building" (Ben's term), D/R was the quintessential product of that approach: a showcase for beautifully designed merchandise that didn't compete with its surroundings. Its ethereal design consists of floating minimalist concrete slabs cantilevered from raw concrete columns, enclosed by a totally transparent glass skin. Its open corners invite the world in, and the faceted façade combines reflection and transparency, in what Ben described as a "kaleidoscope of people, shadows, buildings, and clouds."

"If you can see it, you want it."

Ben loved the products he sold, believed in their ability to enrich life and home, and understood how to showcase them.

"If you can see it, you want it," he would say, and the D/R building embodied that philosophy as one large, multifloored display window. We see all-glass design in today's Apple stores, but in 1968, it was a revolutionary retail concept. The building's transparent skin erased the distinction between interior and exterior, leading the 1971 BSA Honor Award Jury to note that "the life of the building extends to the life of the street." The brick sidewalks continue into the interior, which Ben described as a "high, airy lobby, not unlike the plaza where a festive street bazaar is in progress."

The interior kept shoppers moving through the store: Staggered half floors beckoned upstairs — the climb up short stair runs seemed inviting, not daunting, thus solving an eternal challenge for retailers. On every floor, an open, wall-less plan, enhanced by natural materials — brick, wood, sisal, and cork — complemented the merchandise and the building structure, creating an endless showroom.

Ben's worldview shaped a design philosophy that valued research and experience over intellectual theories. I remember working on a handrail design and being sent out into Harvard Square to find and feel well-designed handrails. Ben always strived for excellence and enjoyed researching new ideas. D/R's famous glass skin itself is an example. It began as a conventional storefront system with mullions but, when the design team discovered a new technology allowing glass to be engineered as free-floating unframed panels with silicone joints and metal clips, Ben approved the innovative system, which was new to the US market.

"Markets depend on movement."

What is Harvard Square without window-shopping, and what is the D/R building if not window-shopping on a grand scale? It mined the connection between products and people, magnifying the activity inside.

"Good markets and fairs thrive on movement and action," Ben said. "They don't happen in architectural 'masterpieces,' but in lively spaces that mix people and functions." In its visible, market-inspired bustle, the D/R building glowed out to the street, particularly at night.

It still does. Now on its third retailer and fourth decade, its faceted glass box endures, and I can't imagine Harvard Square without it.

Wendy Prellwitz AIA is a founding principal of Prellwitz Chilinski Associates in Cambridge, Massachusetts. She was a designer at BTA from 1976 to 1980.



D/R building in 1969, before the 1970 construction of 44 Brattle Street (to left of photo) by Sert, Jackson and Associates, which, with buildings by TAC and Earl R. Flansburgh on Story Street, constructed for their own offices, formed "Architects' Corner." Photo by Ezra Stoller © Esto.



Photo © 1977 Steve Rosenthal.

FANEUIL HALL MARKETPLACE (QUINCY MARKET)

Boston, Massachusetts

It is easy these days to dismiss Quincy Market — as the Faneuil Hall Marketplace is commonly known. The whole idea of an urban "festival marketplace" is now so familiar as to be uninteresting; an idea exhausted by multiple, unworthy imitators across American cities, (while still influential and being discovered across rapidly urbanizing Asia). Still, although the activities of shopping, dining, and people watching (not to mention juggler- and clown-watching) are commonplace, the place itself remains, well, distinctive, special, venerable. Whereas the Design Research building (as Cantabrigians still refer to Thompson's other landmark of retail architecture) is about the display of the things inside, and so is dependent on being full, the Market is about a place in the city and the appeal of a promenade.

The appeal of the Marketplace has never been primarily about the stuff being sold there, as critical as sales are to its financial stability. Ben Thompson was among the first Modernists to figure out the power of intertwining history, commerce, and leisure in the cause of contemporary urbanity. Even as the enclosed, "atrium-ed" suburban shopping malls were gaining popularity, Thompson foresaw that a simulacrum of a traditional street was ultimately unlikely to be as satisfying as the real thing. Yet he understood that the traditional street required modernization, not to accommodate cars, but to rev up the attributes of promenading for a modern society. The magic of Quincy Market lies in the seductions, encounters, and small pleasures experienced along a walk.

A certain urbanistic alchemy was required to revive the downtrodden downtown in the mid-1970s. Saving some parts of the city's heritage from the prowling imminent wrecking ball of urban renewal was key. To come upon these reimagined long-shuttered warehouses when they first opened was to experience something short of a miracle. The setting seemed at once modern yet historic, unprecedented yet traditional, certainly new but somehow also familiar, and now meant to be enjoyed! It was uncanny to discover that these utilitarian, everyday structures — in a Bostonian's memory forever grimy, decrepit, and inaccessible — could be marvelous porous containers capable of accommodating goods and people in equal measure. Faneuil Hall's restored presence and historic status surely added to the aura, but it is precisely the casual embrace of a national landmark, not its dominance, that resonated for a modern culture of flaneurs. The Market also reintroduced suburbanites to the pleasures of visiting downtown and reassuring them that it was safe to do so.

What's more, a long civic corridor had materialized, tying the newest urban-renewed parts of the city to one of its oldest precincts. A connection was made between the then recently completed, heroic yet somewhat unsettling Government Center and Boston's ancient, fitfully reawakening waterfront. This was a gift. City Hall and its Plaza had tried their darnedest to turn their back to the old Dock Square and its dilapidated structures from a bygone era. But here was sprung a "bridge" from the present to the past, with the bridging elements themselves being old *and* new. City Hall Plaza, not often loved, would surely be less visited, and less tolerated, were it not for the adjacent marketplace serving as its counterpoint. And the waterfront, too, would be less often reached were it not for the funneling outward from the Market.

No matter that Bostonians take Quincy Market for granted these days. Thanks to Ben Thompson's intuitive understanding of the importance to cities of experiential, tactile, visual, olfactory connectivity, the Marketplace revived the pulse of the city, once again becoming the fulcrum of the city center's public realm. Though largely ceded to a visitor economy, and perhaps over-programmed, the Marketplace reminds us well of the primal pleasures of city life.

Alex Krieger FAIA is a principal of Chan Krieger NBBJ in Cambridge, Massachusetts, and professor in practice of urban design at the Harvard Graduate School of Design.

ORDWAY MUSIC THEATER

St. Paul, Minnesota

1981–83

It was the early '80s, and Ben Thompson's design practice was at its height of productivity following the resounding success of Faneuil Hall Marketplace. The focus of the practice was clear: seeking the perfect balance between Modernism, which represented the firm's true roots, and the very essence of what makes a building or a city livable and vibrant.

Then along came a new commission for Ben and a new building type for BTA — the Ordway Music Theater. With it came the beginning of a new era in theater design.

The design effort on the Ordway began, as always, by learning all we could of recent precedents for this particular building type. The discovery startled us: architectural Modernism had not been good for the performing arts. Actors, directors, musicians, and conductors all largely reviled the results. The theater design giants of the time, Kevin Roche and John Dinkledoo, Caudill Rowlett and Scott, and Max Abramovitz, to name but a few, had seemingly fallen victim to too much "form follows function," too much acoustical engineering, and too much architectural democracy.

The theater and concert hall work of the 1960s and '70s represented a large body of publicly funded structures, each aimed at reaching maximum audience capacity, efficiency, and acoustical perfection. The structures were monumental in scale — sometimes scale-less. Auditoriums featured "acoustically shaped" walls and ceilings. Floor plans emphasized crowd management: continental seating, with seemingly endless rows of identical seats, swiftly moved patrons to and from their adjacent parked cars. The buildings were grand, with soaring lobbies and gigantic staircases, but something just wasn't right. The patron experience had been boiled down to the bare essentials of functionality. The ceremony and celebration of attending a live performance with others had been designed out of the overall experience.

Equally distressing was the experience of the performers onstage. They looked out into a venue with overwhelming scale, a sea of human bodies. The actor, the musician, the conductor — still the same size as ever — suddenly seemed diminished and unable to artistically or emotionally connect with the blur of anonymous faces.

So our design-precedent search rolled back the clock and largely skipped the latest decades of design. We looked at venues across the globe, some hundreds of years old. After months of slideshow immersion, we began to define the essentials of why these historic buildings worked so well and were so revered: We needed aisles — for it is in the aisles that we meet friends and share in the common enjoyment of the arts. And why not have people "on the walls"? Not only is it great to see other happy patrons smiling back at you, but the proximity of those very patrons also connects the performers with their audience.

Once we discovered that acoustician Larry Kirkegaard shared these observations, we soon learned that boxes, balconies, aisle railings — all the elements that served our humanistic goals — made a positive contribution to the natural acoustical qualities of the room. Somehow these attributes had been lost.

And so the Ordway Music Theater design journey began, combining a new understanding of performance spaces with BTA's experience with urban theater, pulling the excitement of the performing arts into the city itself. After its heralded opening in 1985, the design community took notice; a new paradigm had been set. Hardly a performance hall has since been built, regardless of its signature style, that does not populate the walls with people, gather them in aisles, and foster a celebration of the arts. That's the legacy of the Ordway.

Scott Wilson AIA is a principal of Wilson Butler Architects in Boston. From 1981 to 1993, he was a designer at BTA, where he was project architect for the Ordway Theater and the Broward Center for the Performing Arts, which his firm is currently renovating.



Photo © 1985 Steve Rosenthal.





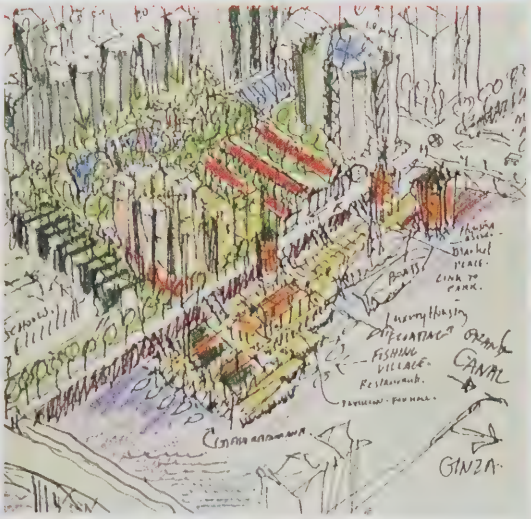


a life in architecture

by Mildred F. Schmertz FAIA







How the boy from Minnesota became the man who reshaped cities.







"I want to make young people realize how inexhaustible the means of creation are if they make use of the innumerable modern products of our age, and to encourage these young people in finding their own solutions." —Walter Gropius

Benjamin Thompson entered the Yale School of Architecture in the fall of 1938. Had he chosen Harvard instead, he would have been among the first American students to meet and learn from Walter Gropius, who had become chairman of the department of architecture in 1937. Ben and his colleagues in New Haven surely knew what the Bauhaus founder and master was up to in Cambridge, yet it was not until 1944, near the end of Ben's World War II service as a lieutenant on a US Navy destroyer escort, that Ben finally met him. Ben's ship had docked in Boston. It was the custom of Gropius and his wife, Ise, to gather students and friends at their home in Lincoln, Massachusetts, on Sunday afternoons, and one of them took Ben along. "I found Grope very warm and interesting," he remembered. "We walked about and discussed the design of his house. I think I hit it off with him right from the start." Ben soon began to see more of Gropius, to whom he brought his own world of experience and learning as well as his hopes for what a life in architecture could ideally be.

Ben was to the manner born, although his family life was difficult and complicated. His life began in St. Paul, Minnesota, on July 3, 1918, and he had some early advantages — a prosperous land-owning father and a mother who was an artist and collector of art. He left the Midwest for a New England prep school and then the University of Virginia. Travels in Europe with his mother opened the world of architecture to him and led him to Yale, which was, at that time, still under the influence of the Beaux Arts system. Wallace Harrison, whose own architecture had begun to break with this conservative tradition and move in the direction of Modernism, was Ben's most influential teacher.

Ben's circle of friends and colleagues soon included architects Norman and Jean Fletcher, Sarah and John Harkness, Robert McMillan, and Louis McMillen. This young group, all of whom had been in architecture schools before the outbreak of World War II, were looking for a new way to practice architecture in the postwar world. In 1946, they founded The Architects Collaborative (TAC) and invited Gropius to form a partnership with them. At the beginning, Ben and the rest of the TAC team were inspired by youthful idealism. As could be expected, such high purpose didn't survive the realities of practice, such as getting and keeping work. Ben, however, brought in many desirable commissions, most from New England's academe, that allowed and supported his own idealistic beliefs. His best work while at TAC included campus buildings at Amherst, Andover, Brandeis, Harvard, and Williams.

In his years at TAC, Ben was a merchant as well as an architect and continued this activity for the greater part of his life. In 1953, he created Design Research (D/R), a retail store that occupied the ground floor of a modest 19th-century wooden house on Brattle Street. Appropriate furniture, rugs, fabrics, and housewares for the private houses TAC was designing had been hard to find. In the late '40s and '50s, there were very few stores anywhere for clients to buy what suited the way they wanted to live. Said Ben, "I have always believed that because the experience of living and working occurs inside a building, our best efforts should go into creating a stimulating and sensual interior environment that should be as special and personal as each owner could make it."

A holistic view of life, design, and architecture. Images (left to right, top to bottom): Portrait of Ben Thompson at nine years old on family farm, courtesy Jane Thompson. Massimo Vignelli dinnerware at Design Research, photo by Elizabeth Malko. Sketch of Japanese dinner setting by Ben Thompson. Portrait of Ben Thompson © Carol Harper. Detail, Cape Cod landscape, photo by Ben Thompson. Concept sketch for Harumi Island, Tokyo, by Ben Thompson. Detail of *Still Life with a Curtain* by Paul Cézanne. Thonet chairs at Design Research, photo from Design Research Archive, courtesy Jane Thompson. Portrait of Ben Thompson from BTA Collection, courtesy Jane Thompson. Drawing for the Ordway Theater in St. Paul, Minnesota, by Ben Thompson, courtesy Ordway Center for the Performing Arts.

Ben always had more to say about the beauty of the sea and sky around their home, and the ease of life there, than about the buildings. In his world, architecture was life.

Ben's achievements as the architect of choice for elite New England academic institutions, combined with his successful entrepreneurship in the home-furnishings market, did not offset his increasing concern about the continuing loss of idealism at TAC. For him, the types of commissions the firm accepted told a sad story. He strongly opposed the master planning and design work for US Air Force Air Defense Command bases from which to bomb other countries because it served a purpose that Ben found morally questionable. The Pan Am Building (now MetLife) at New York City's Grand Central Station, a commission that Gropius brought to the firm, was too big and out of human scale to ever have been allowed to happen. The clients who wished to build the University of Baghdad were a military regime with little time for their architects, nor did the Iraqi academics bother to pay attention to TAC's ideas about what the content of a Western-based university education might be. Ben believed that the firm should never have taken on Baghdad to begin with and had no justification for continuing the work. He saw the commission to be so poorly conceived as to cause TAC to abandon all that was left of the higher goals the firm once had. At the same time, he was chafing against TAC's compensation structure, which penalized him for outside income from D/R and teaching. It was clear to him that it was time to go. In January 1966, after 20 years, he left TAC to establish Benjamin Thompson & Associates (BTA).

An early initiative at BTA was the development of a revitalization plan for Boston's old Quincy Market and Faneuil Hall, a nine-year effort beginning in 1967 that would eventually shape the direction of the firm and establish BTA's international reputation. The celebratory opening of the first phase of the Faneuil Hall Marketplace, coinciding with the 1976 Bicentennial, marked not only an innovative design but also an innovative collaboration with the Boston Redevelopment Authority and the Rouse Company. BTA was to design four more marketplaces with the Rouse Company: Harborplace in Baltimore, South Street Seaport in New York City, Bayside Marketplace in Miami, and Jacksonville Marketplace in Jacksonville, Florida. The success of the Faneuil Hall Marketplace also led to the firm's rehabilitation of Ghirardelli Square in San Francisco and Union Station in Washington, DC.

When Ben spoke or wrote of his life's work, he had much to say about the joy of it, but like all good architects, he dealt with the tough realities — namely the often unforeseen contingencies that shape the always messy process of design and building. Fortunately, Ben also had the energy, drive, and resources to be his own client. In 1970, he opened the new headquarters of D/R in Cambridge, a glass-sheathed building of great beauty over which he had complete design control, simply because it was his. He also designed the restaurants he and his wife, Jane, owned: Harvest Restaurant in Cambridge and, at the Faneuil Hall Marketplace, the Landmark Inn, Flower Garden Café, Thompson's Chowder House, the Wild Goose, and the Bunch of Grapes. He recalled that "our pleasures, our horizons, our identities became more clearly defined as we created the interiors, the menus, and the hospitable ambiance of these places. We also provided some of the vegetables from our kitchen garden on the Cape."

Ben is best known for D/R, his academic work, and the marketplaces; yet, in later years, BTA engaged in urban redevelopment planning for many cities and towns in the United States as well as in Great Britain, Ireland, and Japan. Although he did not make a practice of designing for the performing arts, he created two outstanding concert halls: the Ordway Music Theater in St. Paul, Minnesota, and the Broward County Performing Arts Center in Fort Lauderdale, Florida. The planning of luxury hotels worldwide was never a specialty of the firm, but Inter-Continental Hotels commissioned and built two BTA designs, one in Cairo and the other in Abu Dhabi. In 1987, BTA received the AIA Firm Award and, in 1992, the AIA recognized Ben's life achievement with its Gold Medal. His health declined in the following years, and he died in 2002.

Scudder Lane, the Thompson summer home on a high bluff, overlooks Cape Cod Bay and a salt marsh. It is a collection of simple wooden structures that had once been a hunting camp. Before Jane joined his life, Ben had been devoting himself slowly to its repairs and new uses. He admitted that "my effort, on behalf of myself as client, might have continued to be a bit too relaxed were it not for Jane, who helped me make the old place work truly well for ourselves and our respective families." When he spoke of their home, Ben always had more to say about the beauty of the sea and sky around it, and the casual ease of their life there, than about what he and Jane actually did with the little camp buildings. BTA people were frequent guests, and Ben liked to think that being there helped deepen their understanding of architecture and life. In Ben Thompson's world, architecture *was* life. ■

Mildred F. Schmertz FAIA writes for *Architectural Digest* and *The New Criterion*. She was a writer and editor for *Architectural Record* for 33 years, serving as editor-in-chief from 1985 to 1990, and covered many BTA projects. Currently she is the editor of Ben Thompson's memoir, a work in progress.

Editor's note: An interview of Jane Thompson by Mildred Schmertz about the development of the Faneuil Hall Marketplace, "A Marketplace of Ideas," appeared in the July/August 2006 "1976" issue of *ArchitectureBoston*, online at: www.architectureboston.com.

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South Street Seaport, New York City, 1979–81. Architect: Benjamin Thompson & Associates with Beyer Blinder Belle. The "festival marketplace" comes to New York, with a combination of renovated structures (Fulton Fish Market pictured here) and new construction designed to look like renovated old buildings to emphasize the creation of something new in a historic context. Photo © 1983 Steve Rosenthal.



Government Services Center (Lindemann and Hurley buildings), Boston, 1962–71. Architect: Paul Rudolph with M. A. Dyer; Desmond and Lord; and Shepley, Bulfinch, Richardson & Abbott. In a virtuoso but ultimately bewildering application of *architecture parlante*, in which buildings suggest their functions, Rudolph goes for Baroque, with a stair worthy of Borromini and a leering, menacing anthropomorphism (or, for those who insist on seeing frog imagery, amphibiomorphism). Photo © www.brucetmartin.com.

Ben & Paul

Two architects, two views of Modernism: Ben Thompson and Paul Rudolph

by David N. Fixler FAIA, LEED AP

Modern architecture has been characterized by a quest to reconcile its social, experiential, technical, and aesthetic aspirations with its formal vocabulary. This struggle is probably most apparent in its preoccupation with finding the most appropriate expression for the dynamic aspects of modern life, a pursuit that, over time, manifested itself in two fundamental ways. The first has given us sculpture — buildings that embody movement and newness through the use of innovative formal language. The second has given us theater — buildings that serve as a stage, an armature upon which the variety and excitement of modern life can unfold.

As Modernism matured in the postwar era, critical debate began to throw these positions into high relief, and by the early 1960s, Paul Rudolph and Ben Thompson began to emerge as leading proponents of each school of thought. Tracing their careers and how these sensibilities evolved resembles the intertwining strands of a DNA molecule — each informing the other while remaining utterly distinct. Thompson was a Northerner, a Yale graduate who embraced teamwork, went on to work with Walter Gropius and The Architects Collaborative (TAC), became chair of the architecture department at Harvard, and finally formed his own office around a like-minded group of architects to take the team approach still further. Rudolph was of the South, attended Harvard under Gropius, but very early rejected the collaborative design ethos in favor of the Howard Roark/Frank Lloyd Wright model of the architect as the solitary genius guiding a team of acolytes. He struck out early on his own, and later, as the leader of Yale's School of Architecture (overlapping for one year with Thompson's tenure at Harvard), used this model to shape the sensibilities of some of the most personal, "starchitect"-centered practices of the late-20th century.

These approaches yield very different architectural and urban experiences. While Thompson's buildings are rarely individually memorable as architecture, they are unrivaled as places in which to absorb the color and variety of modern life. It may in fact be argued that Thompson's genius was really in defining, interpreting, and designing the "lifestyle experience," as suggested in the 1990 issue of *Process Architecture* that was devoted to Benjamin Thompson & Associates (BTA): "Today, more than ever before, BTA's architectural reticence can be astonishing. It is a measure of how deeply the firm believes architecture per se should not be a distraction from the important things in life."

Rudolph's buildings, on the other hand, are insistent and instantly memorable as architecture — the experience of them is about them, the use and understanding of their spaces dictated by their formal power. This sensibility is evident at every scale and in every period of his work, from the smallest of his early Florida houses, through his public and institutional buildings, up through the urban-scale projects of his later career.

Thompson and Rudolph were active participants in the debate that percolated through the 1950s on the shortcomings of functionalism and the need to find appropriate ways in which to invigorate a Modern architecture that was becoming somewhat moribund in the wake of the first great wave of postwar development. Citing a renewed concern with humanism, each in his own way also turned to Europe for inspiration. In addition to Thompson's forays to Scandinavia, Italy was an important influence for both architects. Rudolph's insights into the structure of traditional Mediterranean urban form enabled the development of his unique formal sensibility. What is less acknowledged is the parallel between Thompson and architects such as Luigi Moretti and particularly Carlo Scarpa in imagining how to juxtapose a Modern work with a traditional structure. Moretti's Casa Girasole in Rome (which coincidentally has a main façade eerily evocative of Design Research) and Scarpa's work at the Accademia and Fondazione Querini Stampalia in Venice and the Castelvecchio in Verona demonstrate ways in which contemporary architecture can co-exist in dynamic tension with history in much the same way that Thompson did in his groundbreaking work with TAC on the radical renovation of Boylston Hall at Harvard and the later renovations to Boston's Faneuil Hall Marketplace.

Their differences in attitude toward form and experience are in evidence even at the most rudimentary architectural level. Rudolph's Hiss (Umbrella) House of 1953 and Thompson's Burke Pool House of 1961 are two very different takes on the creation of a similar basic residential unit. Thompson's self-proclaimed "re-interpretation in timber of the archetypal Miesian glass pavilion" reveals a spatially static, structural weightiness (the timber frame is exposed inside) that is characteristic of much of his architecture — at any scale. Thompson's space itself is utterly unencumbered; nothing intrudes on the users' ability to arrange it however they choose. Rudolph goes to the other extreme: While concealing the overhead structure and minimizing the verticals to their slimmest dimension, he strongly suggests ways in which the space can and should be used through changes in level, articulation of the interior space, and changes in material and color — all persuasively done with a touch that is both light and architecturally electric.

At the institutional scale, a similar comparison can be made between the tectonic system that Thompson developed for numerous academic commissions, beginning with his work on Brandeis University's Academic Quadrangle in the mid-1950s and Rudolph's Jewett Arts Center at Wellesley College of 1955–58. In both instances, the architects were seeking a Modern expression appropriate for the campus setting of a traditional New England educational institution. Each uses concrete in place of granite or limestone to articulate structure, with both traditional water-struck brick and large areas of glass as the primary materials of the exterior enclosure. Thompson's system is just that: a universal, multipurpose concrete waffle-slab floor and roof construction that is applied indiscriminately over a grid of concrete piers. Infill panels of brick and steel-framed glass are clearly articulated as non-load-bearing elements. It is a system of quiet elegance and great functional flexibility that at its most refined — as in the work at Phillips Academy in Andover and the Chase Manhattan prototype branch bank in Great Neck, New York — takes on a Miesian quality in its sense of calm and balance. Learning from his experience with contemporary Scandinavian Modernism, Thompson developed a complementary palette of materials — quarry tile and slate floors, brick walls in public areas, oak and laminated birch millwork — that gave the buildings scale and texture.

Rudolph was more overtly aggressive in engaging Wellesley's Collegiate Gothic context. The structure itself is mannered through the use of deep sculptural flutes that create quatrefoil column shapes evoking Gothic colonnettes, a waffle slab with an articulated edge, and waffle pans shaped and proportioned to recall the strong, prow-like horizontal thrust that is a theme throughout this work. These moves together lighten and animate the structure, with the addition of aluminum screens recalling Gothic tracery; full-height windows; and tall, pointed skylights that evoke Gothic spires. The result, given essentially the same tectonic system and material palette as the Thompson buildings, is instead a unique and thoroughly customized response to this particular context.

The next leap is to the scale of the city, where the contrast of their respective philosophies is most starkly revealed. Here the idea of the "festival marketplace" — and the city as theater — becomes most evident in Thompson's work. His buildings are backdrops, armatures that enable the unfolding of a colorful, flavorful, and (most important) desirable urban experience. As these expand into the realm of the unbuilt or partially realized megaproject — such as the Custom House Development in Dublin, or Harumi 1 Chome in Japan — the architecture remains unassertive and almost self-deprecating relative to the splendor of the experience.

In contrast, Rudolph asserts a utopian ideal about the ability of architecture to mold one's experience of both the institution and the city. Nowhere is this more evident than in the 1962–71 Boston Government Services Center (Lindemann and Hurley) buildings — which stand, imperfectly realized, quasi-ruinous, but exalting in their formal glory, less than 1,000 yards from



Burke Pool House, Oyster Bay, New York, 1961–62. Architect: Benjamin Thompson & Associates. Thompson's version of "Miesian" universal space features heavy exposed-timber framing in opposition to the weightless, but perfectly proportioned, Platonic clarity demonstrated most famously in Mies van der Rohe's 1951 Farnsworth House. Despite claims to universality and therefore flexibility, Mies was in fact very prescriptive about the placement of furniture and objects. In the Burke Pool House, Thompson clearly leaves those decisions entirely up to the users. Photo © Louis Reens, courtesy Frances Loeb Library, Harvard University Graduate School of Design.



Umbrella House, Sarasota, Florida, 1953. Architect: Paul Rudolph. Rudolph's primary concern here is creating an architectural space to be perceived and experienced on his terms. The muscularity so evident in the concrete structures of his later career is foreshadowed here in the articulation of the tectonic and space-defining elements, including the tension generated between the dynamism of the space and the delicacy of the slender structure and railing supports. Photo by Lionel Freedman, courtesy Library of Congress.





the Faneuil Hall Marketplace. It is easy to point to this complex as an act of architectural hubris — formally virtuosic but utterly dystopian from the perspective of the pedestrian either experiencing the complex at street level or trying to navigate its labyrinthine plan — but it is nonetheless heroic, if seriously flawed. At the larger urban scale, analogous with Thompson's revitalization of the urban waterfront, one need look no further than Rudolph's 1967 proposal for the New York Graphic Arts Center, a megastructure that builds on the modular principle of Safdie's Habitat '67 with the scale, utopian vigor, and structural pyrotechnics of the Japanese Metabolists.

There is a final lesson in comparing the models prepared for this project and those that Thompson's office built for its large urban projects. Rudolph's is monochromatic, minimally populated, mysteriously lit from within and relentlessly focused on the architecture as spectacular, theatrical sculpture that backs a hard edge up to the city while opening out to the Manhattan waterfront and the infinite beyond. Thompson's, by contrast, are bright, colored, heavily populated, bannered, and snugly embedded within their urban context. With Rudolph, we are impressed but perhaps more than a little intimidated — the architectural equivalent of "shock and awe" — while Ben is inviting us all to come on down and have a good time. In the end, great architecture needs and can accommodate both. ■

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Harumi 1 Chome masterplan, Tokyo, 1988–91. Architect: Benjamin Thompson & Associates with Shun Kanda and Nikken Sekkei. A vibrant, colorful, polyvalent work of urban design with an eclectic blend of architectural styles to mirror and showcase the rich variety of human activity. Photo © 1989 Steve Rosenthal.

Graphic Arts Center, New York City, 1967 (unrealized). Architect: Paul Rudolph. In a project perhaps better named "Habitat on Steroids," Rudolph brings his muscular sensibility to the cause of prefabrication at a gargantuan urban scale. The emphasis is on sculptural form — stacked rather than modeled as in the Boston Government Services Center project — and the monochromatic use of color here is strictly an architectural accent. Photo by Ezra Stoller © Esto.

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About Joy

BY KYLE DUGDALE AIA

Joy is among my favorite architectural words.
Joy, optimism, dreams — these are my themes.

I have tried to re-introduce joy after long joyless war years.
I believe buildings should bring joyous experience not just to architects but to the lives of people.

— Benjamin Thompson FAIA, AIA Gold Medal acceptance speech, January 22, 1992

Accounts of Benjamin Thompson's life and work are saturated with extravagant applications of the word "joy" in all of its lexicographic variants. "He knew like no one else how to create a joyful environment"; his retail venture, Design Research (D/R), "joyfully occupied a quarter century" of dedicated effort; he aimed to "seek out the beautiful, the joyful, and the enriching in whatever he might be doing"; he loved children's toys because "they spoke to his idea of joy, color, and fantasy"; he "tried to create an architecture of hope and joy" — and so on and on. The record of his own language is no different; the transcript of his 1992 AIA Gold Medal acceptance speech, titled "Ben's Ode to Joy," uses the word 13 times in 11 sentences. The centrality of the idea is hard to miss.

As ideas go, this one is difficult to dislike; to argue against the value of joy would seem perverse. And yet, in the experience of many, the words "joy" and "architecture" are seldom heard together. The profession has not learned, on the whole, to speak in these terms. Joy, like beauty, seems difficult to pin down, hard to design, impossible to teach. Looking back at their own education, many architects might wonder which of their design critics would have been willing or qualified to pronounce on the subject — the very term "critic" does not provoke optimism on this count. And in any case, what is the place of joy amid the anxieties of the modern world? Does not the very word awaken memories of a Christian hope that our modern culture has come to distrust? Is the appeal to joy not hopelessly subjective, overshadowed by a fear of disillusion, by a distrust of the sticky sweetness of kitsch? The language of joy exposes us to the accusation of naïve optimism; the very possibility of joy might seem to depend on an ignorance of the pain of our own history,

< Painting by Ben Thompson, courtesy Jane Thompson.

described by the philosopher Arthur Schopenhauer as "the long, heavy and confused dream of mankind." Are we not rightfully distrustful of the empty promises of an easy, fabricated joy, blind to the realities of a world which — perhaps more than ever before — is without excuse for insensitivity to its own violence?

Yet this was precisely not true for Benjamin Thompson. His commitment to joy was a carefully articulated response to that world of violence. His widow, Jane Thompson, has suggested that his search for the joyful was a reaction to an early life that was in many ways difficult. He graduated from Yale's School of Art and Architecture in 1941, just in time to be plunged into the destruction of the war; his launch into a career in architecture came only after four hard years of service in the US Navy, and he shared with his partners in The Architects Collaborative a deep-felt commitment to addressing the challenges of postwar reconstruction. A quarter-century later, one of the brightest landmarks of Thompson's Cambridge practice, the D/R building on Brattle Street, grew out of the stormy environment of 1968, overshadowed by the despair of student activists over two tragic assassinations in the US and an unrelenting war in Vietnam. It was in this troubled context that Thompson attempted to build an architecture of hope and of joy.

In this regard at least, Thompson's work stands firmly within the Modernist tradition, in the belief that architecture can and must respond to the problems of the contemporary world. Early Modernism, too, grew out of troubled times. Even if "joy" may not be the first word to spring to mind in association with Walter

Thompson's commitment to joy was a carefully articulated response to the world of violence.

Gropius, it is clear that Thompson's partner shared the belief that architecture must identify and address the real failures of modernity. And if Modernism can perhaps be accused of an excessively confident assessment of the future, it is harder to maintain that it suffered from an overly optimistic estimation of the present.

A century earlier, Schopenhauer had made an even stronger claim for the role of the arts. In the second volume of *The World as Will and Representation*, he argued that sensitivity to human tragedy is an inseparable companion to the artist's perception of the world; in fact, "the brighter the intellect … , the more distinctly does it perceive the wretchedness of its condition." Indeed, it is precisely this that suggests the need for art. To argue along similar lines, a sense of alienation is in a way perhaps necessary to the architectural impulse.

On the other hand, even Schopenhauer — a man not known for naïve optimism — was willing to concede a role to tragedy's natural counterpart, comedy: "It is true that even comedy must bring before our eyes sufferings and reverses of fortune, as every presentation of human life inevitably must; but it exhibits them to us as fleeting, resolving themselves into joy." If we are willing







to understand comedy in its broadest sense, then the architecture of joy is an appropriate medication for the tragedy of life. Yet it also presents its own dangers. Schopenhauer concludes by asserting that comedy is designed to "keep us in all circumstances in a good mood. In the result, it therefore declares that life on the whole is quite good, and in particular is generally amusing." If undiluted pessimism is like tragedy without comedy, comedy without tragedy is an illusion.

Thompson's work has certainly been exposed to this criticism. His architecture has been compared to a cocoon that attempts to shut out the surrounding world of violence; and his philosophy has been reduced to "the idea that you should have a nice life with nice things" — a philosophy in danger of ascribing too central a position, perhaps, to the association of joy with material goods, a philosophy that is uncomfortably close to the promise of satisfaction via consumption.

And this begs the question as to where such joy is to be located. Can joyful architecture, if such a thing exists, be produced only by a joyful architect? This is a counterpart, surely, to the suggestion that beautiful architecture can be produced only by a beautiful architect; some of us would have reason to hope otherwise. Ruskin, for one, might have preferred to locate the need for joy not with the architect but with the builder; yet this seems today a quaint conviction. Does the architect design with an eye to the joy of others? A critic might observe that such joy is perhaps easier to achieve amid the lights and colors of Harvard Square's Brattle Street, and that the festival marketplace is most welcoming to those with money to spend on the festivities. Or is this a superficial critique?

It is clear, at the very least, that there are limits to the capacities of architecture's association with joy. And yet, to acknowledge those limits is not to suggest that there is nothing to learn from the exploration. Thompson's retail experiment, which, with its successors, might be argued to have brought his architectural sensibilities to an exceptionally wide audience, was named "Design Research" — the very name suggests that if nothing else, there are at least important questions to be asked here, questions that do not lend themselves to instant or permanent resolution. Certainly Thompson's own architecture developed over many years of such research; his later work seems warmer, brighter, freer, maybe more humane than the austerity of his early work. And this points, perhaps, to one of the more endearing aspects of an explicit commitment to joy: Joy is an uncomfortable companion to arrogance, to self-centeredness, to meanness of spirit, to excessive formality or narrow didacticism. If architecture has at times been prone to such faults, and if there is any substance to Thompson's rhetoric — and the enduring interest in his work would suggest that there is — then the possibility of such joy is surely worth another look. ■

Kyle Dugdale AIA is pursuing doctoral studies at Yale School of Architecture. A graduate of Corpus Christi College, Oxford, and of the Harvard Graduate School of Design, he has taught at Yale and has practiced in London, Chicago, and New Haven.



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Not Quincy Market, Not D/R

Before his urban work brought renown, Ben Thompson found fame on school campuses.

It started with a cluster of dormitories around a pond on the campus of Phillips Academy in Andover, Massachusetts. Within a few years, Ben Thompson, then a principal at The Architects Collaborative (TAC), was perhaps the foremost practitioner of a style that branded progressive New England educational institutions as much as the more familiar Georgian style had half a century before.

TAC had almost a decade of public-school projects behind it, as well as Harkness Commons at Harvard, when Thompson took on the Andover commission in 1956. The Rabbit Pond dormitories drew upon Andover's brick tradition but were purposefully house-like, their domestic scale and informal siting on a wooded slope a marked contrast to the three-story Neo-Georgian residence halls of the 1920s set into quadrangles with the deliberation of chess pieces on a board.

Shortly after receiving the Andover commission, Thompson embarked on the "Academic Quadrangle" (now Mandel Quad), a cluster of classroom buildings for the new Brandeis University campus, for which he developed an architectural vocabulary that he refined in subsequent projects at Andover and Amherst College: poured-in-place, bush-hammered concrete framing and waffle-slab construction with infill panels of Flemish-bond waterstruck brick and glass — symmetrical elements combined in asymmetrical compositions of almost classical proportion. It was a language that shared roots with New England's earliest academic buildings — much as Chaucerian and Modern English are distinct variants of a common tongue.

This was a period of enormous creative energy in Thompson's career, with a flurry of work that foreshadowed ideas that would be developed in his later work. Modern additions and renovations were fearlessly grafted onto historic structures, most famously at Boylston Hall in Harvard Yard, but also at Andover's library and chapel. Glass walls at libraries and classrooms exposed the process of education, implicitly ennobling teachers and students — people — over buildings and institutions. Buildings embraced their sites, unlike the chess pieces of the earlier era, encouraging social encounters and forming outdoor spaces that students inhabited as easily as their dorm rooms. Color and natural materials, including butcher-block wood furniture designed by Thompson, underscored the human scale of the structures, enlivening centuries-old traditions of austerity.

By the mid-1960s and with the establishment of his own firm, Thompson's academic style had evolved from the deceptively light classicism of column-and-slab construction to a heavier expression of the same materials palette using bearing-wall construction. The buildings of this era, which historian Dennis De Witt has called Thompson's Rationalist period, include the Music Building at Amherst, Gutman Library and Pound Hall at Harvard, and dormitories at Colby College. Marked by even greater informality but also a more rugged urbanity, they presage the transition to urban projects that later dominated the firm's portfolio.

Thompson's academic work continued into the 1980s, with projects for New York University School of Law and the Soldier's Field Park student housing at Harvard, adjacent to the business school. By then, most academic institutions had experienced almost two decades of construction, and it was hard to imagine the effect of Thompson's early work in the context of New England's buttoned-up school campuses. It would be wrong to call that effect the shock of the new; Thompson's buildings were not provocative or contentious. But they *were* fresh and sophisticated. These were the buildings that introduced a whole cohort of young Americans to Modernism.

— Elizabeth S. Padjen FAIA

Photographs by Ezra Stoller © Esto

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Thomas M. Evans Science Building, Phillips Academy, Andover, Massachusetts, 1959–63 (demolished, 2004). Classical Modernism: Designed to accommodate changing requirements for science labs, the building features the classical elements of plinth, column, and cornice.





Above, left: Olin-Sang American Civilization Center, Academic Quadrangle (Mandel Quad), Brandeis University, Waltham, Massachusetts, 1957–60. The Academic Quadrangle was the first of several Thompson projects for the new campus, which also featured work by Eero Saarinen, Max Abramovitz, and Hugh Stubbins. The Shiffman Humanities Center is visible in the background.

Right and above, right: Music Building, Amherst College, Amherst, Massachusetts, 1964–68. A transitional work featuring mastery of materials and detail, the Music Building applies the lightness of Andover's Evans Hall to a hybrid structure with extensive use of bearing walls.

Ben Thompson shared design credit for his early academic work with many talented professionals. Perhaps most noteworthy were two associates: Thomas Green was part of his TAC studio before joining him at Benjamin Thompson & Associates (BTA) and later became a principal of BTA; Joseph Maybank, also a TAC alum, left BTA with Henry Reeder, Colin Smith, and Arthur Cohen to form Architectural Resources Cambridge (ARC) in 1969. The concrete structures that were key to the aesthetic of the early work also depended on the more technical talents of two other individuals who were part of the local design community: William LeMessurier, the noted structural engineer, and Herman Protze, an internationally recognized expert on concrete.





Above: Dormitories, Colby College, Waterville, Maine, 1966–68. Housing 200 students, the Colby project was recognized by an AIA National Honor Award. White-painted brick bearing walls break the campus red-brick tradition, softened by the white-birch landscape and, in the interiors, by extensive use of bright colors, supergraphics, wood-slat ceilings, D/R butcher-block furniture, and folk-art portraits and artifacts from the college collections.

LIVE, WOR

Philip Loheed AIA, William Pressley FASLA, and Jane Thompson AICP talk with Scott Simpson FAIA about Ben Thompson FAIA and BTA



Philip Loheed AIA, NCARB, ASSOC. ASLA is a principal of BTA+ in Cambridge, Massachusetts. He joined Benjamin Thompson & Associates in 1968, becoming a design partner. After forming Loheed Design Partnership in 1990, he returned to BTA in 2007. He is the president of the nonprofit Earthos Institute and teaches at the Boston Architectural College.



William Pressley FASLA, LEED AP is the president of Pressley Associates Landscape Architects in Cambridge and Los Angeles. He joined BTA in 1970 as the staff landscape architect before founding his own office in 1977



Scott Simpson FAIA, LEED AP is senior director of KlingStubbins in Cambridge, Massachusetts. A senior fellow and co-chair of the Design Futures Council, he has written extensively about innovation in the design professions. He was on the staff of BTA from 1975 to 1976 (his first job after design school).



Jane Thompson AICP is president of Thompson Design Group in Boston and the co-author of *Design Research: The Store That Brought Modern Living to American Homes* (Chronicle, 2010). With her late husband and partner Benjamin Thompson FAIA, she was a principal of BTA. Her work has been recognized by AIA Institute Honors and, in 2010, by the Cooper-Hewitt National Design Awards with a Lifetime Achievement Award.

Scott Simpson: Let's start with the basics. How did Ben actually attract work to the office? Why did clients hire him instead of TAC [The Architects Collaborative] or Hugh Stubbins or Cambridge Seven?

Philip Loheed: I wish I knew! He always said that your friends are the ones who give you work, so it's wise to have a lot of friends.

Jane Thompson: Ben liked people. He could make a connection in two seconds: "Where are you from? What street?" Totally informal and natural — and he was that way with strangers, friends, clients, and the people he worked with.

Philip Loheed: Over the years, Jane had a great deal to do with the process of marketing the firm. But I think the real process of getting work came down to what Ben was interested in. That, for example, was the basis for the academic buildings that he did when he was still at TAC. Education was one of his thesis subjects at Yale, and he had spent some time thinking about it. So when the first jobs that came along were public schools, he jumped at them. I don't think he did anything more than persuade people that that's what he really wanted to do and that he knew something about how to make a good school.

Scott Simpson: So it was personal passion that drove him and then drew clients to him?

Jane Thompson: Yes, and also his way of seeing opportunities. I first met and worked with Ben several years later, in 1962, when TAC was on the shortlist for a high school in Vermont. I was on the board that interviewed him. You could tell that he really wanted to do this project. And part of his salesmanship was that he was a very circuitous, roundabout thinker — he walked all around a subject in order to see it from all sides. But you knew that this was someone who thought about the problem differently.

Scott Simpson: What drove him to break away from TAC?

> Photo from BTA Collection, courtesy Jane Thompson.

K, PLAY

(Is This Any Way to Run a Business?)



Jane Thompson: That's an epic story. It was a divergence of convictions. In the postwar years, TAC had been designing houses, some of them really experimental. But there was nothing appropriate to put in these houses. Ben found furniture for his clients on trips to Europe; he brought back samples on a ship and took a room for a warehouse so clients could make selections. And it worked. Pretty soon he rented another room, then another, until eventually it was a proper shop — Design Research [D/R]. It ended up being the biggest sub-business TAC ever had. But the TAC partners — with the exception of Walter Gropius, who saw it as part of the Bauhaus ideal of art in everyday life — didn't care about it; they thought it was interfering with Ben's "real" work. One of TAC's social-equity ideas was that everybody was paid the same: a uniform salary for the partners. And if you made money anywhere else, TAC deducted it from your salary.

Ben had a very visual way of working. He would start a new project by collecting images that would address questions like, "What is this site? Who are these people? What are they doing here? What's this about?" He felt that a design solution becomes apparent if you look at it properly.
—*Philip Loheed* AIA, NCARB, ASSOC. ASLA

Scott Simpson: So you got punished for being successful?

Jane Thompson: Absolutely. Design Research was rolling, so they reduced Ben's salary for his presumed, but not real, earnings from D/R. Then in '63, after Gropius recommended Ben for chairman of the department of architecture at Harvard, his Harvard earnings were also taken out. And he was still doing a considerable amount of work for the firm. I think the fact that this didn't even occur to them, or didn't matter, was the irritant that finally caused him to go out on his own. At the same time, TAC was taking on projects that didn't match his interests or temperament or values.

Scott Simpson: So he opened up shop in Harvard Square. What year was that?

Jane Thompson: The firm was incorporated in January 1966. A number of TAC people — in effect, his whole studio — left with him; I came in just when the new company was formed.

Philip Loheed: It was a good-sized group. It included Tom Green and Mac Freeman, who is still with BTA, and Joe Maybank, Dusty Reeder, Colin Smith, and Arthur Cohen, who later spun off to form ARC.

Scott Simpson: Did Ben try to consciously continue the TAC ethos of team-based design?

Jane Thompson: TAC started out like one big studio, but eventually the partners were running their own studios; collaboration came through weekly crit sessions. That was a very different scene from BTA, where Ben was the only owner and also the oldest person by far. Ben's approach to collaboration was more open — everybody had jobs to do, but they didn't own them. Collaboration didn't mean sitting around, looking at something, and criticizing it, but everybody standing over a model and moving things around. It was physical, active design.

Philip Loheed: Ben had a very visual way of working. He would start a new project by collecting images that would address questions like, "What is this site? Who are these people? What are they doing here? What's this about?" He felt that a design solution becomes apparent if you look at it properly. And his way of doing that was to collect images: historical images, site details, artwork, ethnic objects, environmental scenes. Then he would show them to the team. People would react to the images and then he would get more images. So it was a conversation. And if other people — clients or consultants or your Uncle George — happened to come into the room, they were pulled into the conversation, too.

Jane Thompson: He didn't use slides at the very beginning; that came a little later, and there was something aspirational about it. A lot seemed to be in decline in the '60s — run-down cities, abandoned factories and, of course, the two assassinations. He said, "We can't just go on talking about how bad it is. We've got to show how good it is." His idea was to show beautiful things and places. This was really a message of hope to the team itself: You're not just doing a job; you're going to do something really special here.

William Pressley: You can't say enough about the visual communication aspect of Ben's design work. He'd take someone from the office to go look at a building. The next day, he would give you this three-projector slideshow complete with music. It was incredible because the images were all of minute details that you just hadn't seen. He always had a Nikon with a 135 or 200 mm lens with him.

Scott Simpson: There was a certain optimism that suffused the whole place. Obviously, there were lots of pressures, lots of deadlines. But there was also a sense of inclusiveness. The senior staff would sometimes come to kids like me and say: "Take a whack at this." And we'd put up a sketch or two. If it was a bad sketch, it was thrown away; if it was a good sketch, it was somehow rolled into the project. There was a sense of competition in that, but there was also the sense that everyone had a license to offer ideas. If you brought them to the table and they were worthy, they'd be considered.

Philip Loheed: That commitment to inclusiveness and teamwork really was soup to nuts. Ben's daughter Marina, fresh out of college, worked on our models in the early '70s. She and I used to joke about "nubby power" — the power that came from being on the team who placed the dried weeds that represented trees. Charrette sold them as "Foresto Nubby" trees, but sometimes we used dried yarrow that Bill Pressley collected in the field. Nubby power created the sizzle and

beauty added to the models through copious planting. Sometimes the staff would bring their kids in to help out on models — slicing up erasers to make salamis for the little carts representing merchandise and vendors, placing little cast-metal people and cars. There were job captains and team leaders giving direction, of course, but the overriding spirit came from the lack of a rigid hierarchy, which created camaraderie; there was a lot of whimsy and humor. We all felt that we were on a mission, that we were working hard, but that it was a lot of fun.

Jane Thompson: The models really were important. We certainly excelled at presentation models. But the act of making models was part of the design process.

Philip Loheed: Yes. When we started design, everyone would get a collection of wood blocks that represented pieces of the project's program — they were scaled to represent a housing unit, a bay, whatever. And we'd all do a scheme.

Jane Thompson: It was a great way to form architects' minds because, otherwise, you think in two dimensions. It was a hands-on thing. The model would be built up or an alternate would be made, and gradually ideas would become more specific and more realistic. At that point, a drawing or a more sophisticated representation would begin, with a more concrete understanding of the project.

William Pressley: I remember the Abu Dhabi model in particular. Phil went into the model shop and came out six weeks later. At any given time, that model — it was probably eight feet square — had at least 10 and sometimes 20 pairs of hands working on it, and the design was growing, growing, growing. It was like watching a movie.

Scott Simpson: Bill, you came on board in 1970. At the time, it was unusual for firms to have their own in-house landscape departments — although you weren't so much a department as a guy with a helper. But you were very deeply embedded in the whole design dialogue. What was that like?

Ben was not a formalist. He really believed that you could design from the inside out, that a focus on how people would experience and use the building would yield better results than a focus on materials and form.
— Jane Thompson AICP

William Pressley: I was hired on the first Earth Day, and the word "flexibility" was immediately introduced to my vocabulary. I found myself working in an architecture office where everybody had to do everything. I can't tell you how many different things I was asked to do; after several years of that, it actually starts to take hold. Ben was willing to talk about things that I don't think many architects really grasp. The idea, for example, that the landscape shouldn't be a continuation of the building; it should be the other way around.

Jane Thompson: Ben came from Minnesota, where he had spent summers as a teenager on family farms, and part of him thought about the land the way a farmer does, as an entire environment.

When I was hired, the word "flexibility" was immediately introduced to my vocabulary. I found myself working in an architecture office where everybody had to do everything.
— William Pressley FASLA, LEED AP

Philip Loheed: I think hiring Bill also had to do with his design approach — finding a general direction for a project and then encouraging people to bring their skills and expertise to it. Sometimes it could be problematic. We were working on a project in Savannah, and our guys were cheerfully doing all these schemes for a new town. After we got more into it, I finally looked at it and said, "You know what, this is alligator country. This is a floodplain. When people really focus on what's going on here, this project is not going to happen." It was a very difficult moment for BTA — to have to abandon that project. But the water dynamics in that place would just not allow it. But that was another thing about Ben: It was never too late to say, "This is not right."

William Pressley: Usually around 11:30 PM.

Scott Simpson: There was always a last-minute change of some kind on every job, because it was never perfect. It made the whole staff expect that anything could happen, so nobody got really dug into one way of doing something. Ben always wanted to try one more idea, to take it to another level. That was part of the culture that made him so successful.

Philip Loheed: Another part of the culture was the idea that we will move on when a project is done, so we're designing for the people who will occupy the place. Beginning with Faneuil Hall Marketplace, we began to see design as a tool for communicating the spirit and philosophy of a place. We realized that creating world-class environments depended upon our ability to recruit world-class people — as operators, tenants, and stakeholders — who understood that spirit and would "become the place" after we finished our work. That had implications for our process. We realized we had to demystify design and enlarge the collaborative tent of people who were involved in creating an environment.

Jane Thompson: It was beyond formalism. Ben was not a formalist. He certainly had a sense of form, but he didn't start with it. He did not start with squares and triangles and boxes and all those

things that you usually make buildings out of. He really believed that you could design from the inside out, that a focus on how people would experience and use the building would yield better results than a focus on materials and form.

Scott Simpson: One of the big pressures we all experience as professionals is budgets, schedules — all sorts of organized chaos. Was there a tension between the business side and the creative side, or was it rolled into one big flowing river of "Let's get this done"?

> There is now a resurgent interest in the holistic view that Ben took of design — that it's all about the old and the new, about people and the environment and the planet.
> —*Philip Loheed AIA, NCARB, ASSOC. ASLA*

Jane Thompson: You'd never find the business side.

William Pressley: I would like to hear a bit about the business background of Faneuil Hall Marketplace.

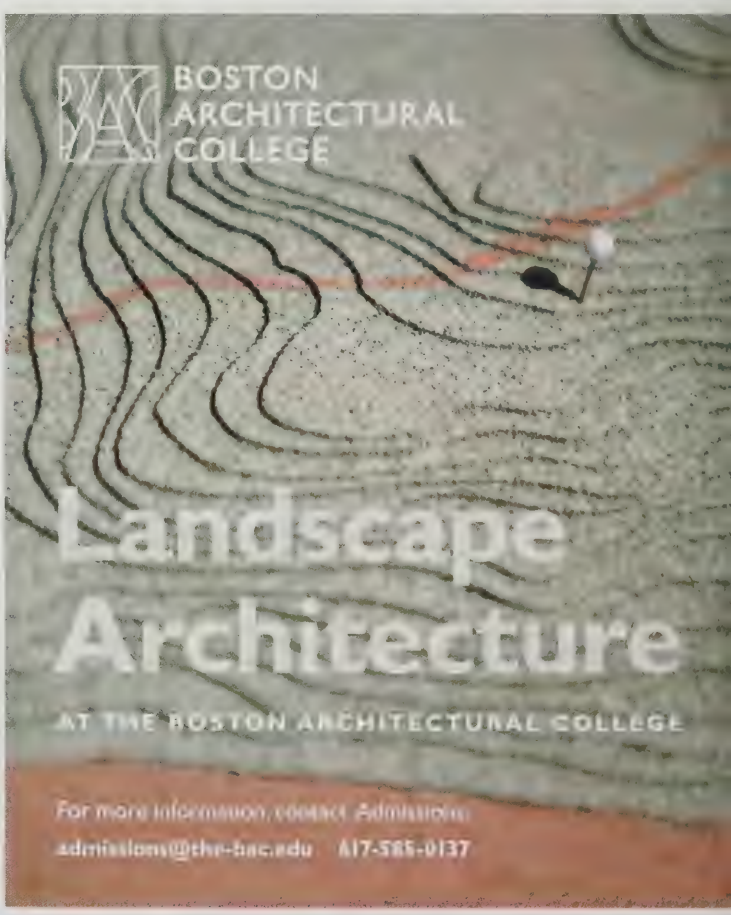
Jane Thompson: It was an example of Jane's 42nd Law: "The secret of happiness is no foresight and a very poor memory."

William Pressley: I remember driving a U-Haul truck to Boston City Hall on Christmas Eve 1970 to get there at five o'clock to submit the response to the RFP [request for proposal]. That was part of the flexibility I learned.

Jane Thompson: Back in 1966, Ben had prepared a proposal for the marketplace — a whole book of plans and images of what these old neglected buildings should be, based on some student work. He submitted it to Ed Logue, who was then the director of the Boston Redevelopment Authority [BRA]. Ed Logue sent it to Arthur D. Little, which was then the only research outfit around. Arthur D. Little, like everybody else, said, "This will never fly because there is no room for anchor stores. You can't finance it." So it came back. Meanwhile, preservation architects were trying to restore the buildings, and the BRA started work on an RFP — you're right, the deadline was Christmas Eve. We assembled a team with a developer from Philadelphia. In seven days, we built a model with little carts, vegetable stands, the whole works. After six months, we got the good news from the new BRA director, Bob Kenney, that we were selected. But just a few months later, the BRA kicked our developer out. We offered to find another one, and Kenney agreed. We eventually found Jim Rouse; otherwise, it would have never happened. We worked on the project with the Rouse Company for the next four, five years. We were never paid a cent — not for 10 years.

Scott Simpson: Amazing! How did you manage to float the practice?





Jane Thompson: We were very efficient and very busy with other projects, which were paying fees. But it really was the Perils of Pauline, especially with city politics. Mayor [Kevin] White fought it all the way until the city's business leaders, especially Norman Leventhal, stepped in. The lease deal with the city finally closed in 1974 and 1975. Rouse wanted to open in August 1976 — the Bicentennial year and the 150th anniversary of Quincy Market. After all those years, we had nine months to do final design and all the drawings, while simultaneously overseeing the rehabilitation of the old Quincy Market building.

Philip Loheed: What is interesting about the Faneuil Hall story, and in fact the whole experience of working with Ben, is that there is now a resurgent interest in the holistic view that it represented and that Ben took of design — that it's all about the old and new, about people and the environment and the planet. I see it in my students.

Jane Thompson: Ben tried to teach architects how great their senses are and how they can understand things with a holistic, somatic sensibility.

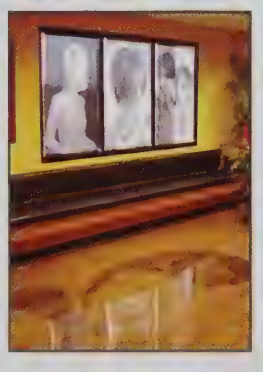
Scott Simpson: He had a very experiential kind of pedagogy. And it attracted a lot of talented people who later spun off to form their own firms. That's the mark of a good office.

Philip Loheed: If I could replicate one thing about those days, that's it: the spirit of a cadre of talented people working together. We've gone through a technological era where it became impossible to replicate because of the way things were produced. We're now emerging beyond that. I recently started working on a project where the client bought a computer matching mine. We use iChat and literally move the mouse together in a very close collaboration. It's fun, and it's really engaging. And I can bring a student into the process and say, "Here, take this file. Sit across the table from me, and we'll work on this together." So the ability to collaborate face-to-face across the table is coming back, because the technology has moved beyond the rudiments that we suffered through in the last 20 years.

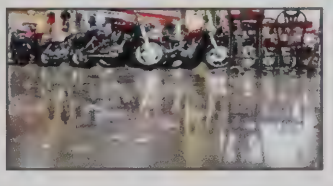
Jane Thompson: Ben was acutely aware of the importance of involving people in the creative process. He said, "I want quality, but not perfection." Springboarding from that is the idea of the presence of the human hand, the flaw in the perfect system. He and I were opposites on the horoscope, if you happen to believe in such things. I never did until I read Ben's. He was a Cancer, the crab, a creature that walks sideways around everything but always gets there. I'm an Aquarius, so I'm left-brained, I guess. We approached everything differently mentally, but always with the same value system. We always wanted to get to the same place. I think that his Cancerian tendencies made him much more open-minded than most architects. A newspaper reporter who was interviewing Ben in the D/R building once asked, "What's your formula?" Ben said, "I don't have a formula." The reporter asked, "So what do you have?" He said, "I have an attitude. I'm an attitude." The reporter grumbled, "Oh, hell, I can't take a picture of an attitude." And Ben said, "Just look around." ■

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DESIGN RESEARCH: THE STORE THAT BROUGHT MODERN LIVING TO AMERICAN HOMES
By Jane Thompson and Alexandra Lange
Chronicle, 2010

At first glance, *Design Research* seems intended to remind us of a time, not so long ago, when Modern design didn't pervade the American retail landscape. When you needed a connection, a dealer of sorts, to hook you up with just that right fix of Scandinavia, inevitably you ended up at one or more of Ben Thompson's doorsteps.

At second glance, it seems unjust that the Thompson contribution to domestic Modernism is not as recognized as that of the Eames legacy, though perhaps the more limited exposure led to a more interesting curation of types and objects, and Design Research (D/R) was ultimately an experiment in retailing. But D/R aficionados know the story well, the tale of Thompson's search for appropriate home furnishings and accessories for the residential experiments that he and his partners at The Architects Collaborative were designing at Six Moon Hill and Five Fields.

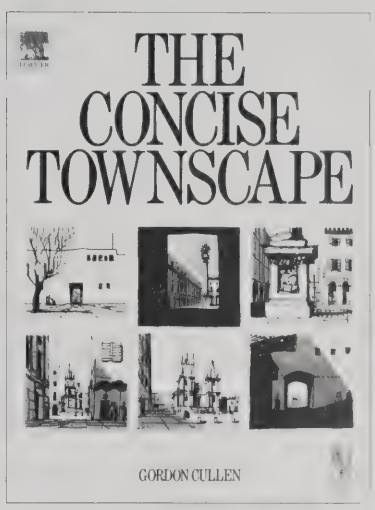
With a third look, it becomes evident that Thompson was not simply a retailer or only an architect but also both a designer and a curator. His holistic approach to the medium of design broke apart the stagnant categories of material, business models, and merchandising, and defined the concept of a "design" store — Noguchi lamps, Mies tables, Fritz Hanzen chairs all shared equal billing with Maltese and Moroccan rugs and hand-painted horsemen, shattering any idea of designer as genius, while putting a sharp mark on the idea of retailer as tastemaker.

A fourth look indicates that this is not a simple story at all but a deeper tale that resonates through the many voices of the people who were part of the D/R experience. Their recollections — snapshots, remembrances, a collection of connections — are captured with the kinetic energy that pervaded it all. Nonetheless, the retelling is effortless, a giddy and guiltily pleasurable glimpse into another era.

A final look, this one through the striking reflections of the Brattle Street flagship — one of Boston's most Heroic buildings, one that confidently merged the language of commercial Modernism with the desire for its more casual residential equivalent, retaining the merits of both. The structure of the building (and by extension D/R itself) is both event and stage, both background and star performer, its neon logo a deft marquee, glowing from an interior wall, the building's only signage.

There is an air of nostalgia that pervades both the design of the book (ably put together by Michael Beirut at Pentagram) and the stories that are contained within it. But it is not the faux-stalgia that is increasingly becoming de rigueur in certain design circles, which yearns for a Modernism unhindered by mass production. D/R offered a vision of life lived to the maximum, where good design led, not to a plethora of mail-order catalogues, but to an anodyne for an increasingly complex world.

Chris Grimley is a principal of over,under, a design and architecture firm in Boston. He is also a co-curator of the pinkcomma gallery, in whose window proudly hangs a neon logo.



THE CONCISE TOWNSCAPE
By Gordon Cullen
Architectural Press (Elsevier), 1961
(most recent reprint, 2009)

Although his name is now rarely invoked, Gordon Cullen was one of the leading voices in the new field of urban design. Through the 1960s and '70s, there could hardly have been an architect interested in the problems of the city who did not own a copy of Kevin Lynch's *Image of the City* and Gordon Cullen's *The Concise Townscape*. Lynch was known in the design hotbed that was Harvard Square; he taught at MIT. But Cullen was the creature of one of the most influential publications of the era.

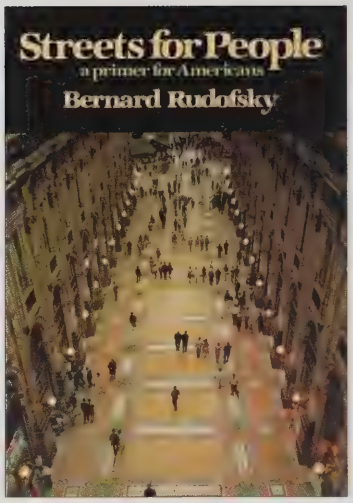
In the years following World War II, the newly elected Labour Party launched programs central to the rebuilding of British society. In a very literal sense, architects were in the vanguard of this national effort, and it was in the pages of *The Architectural Review*, where Cullen was an assistant editor, that new thinking in planning, design, and building for the new society were presented and discussed. *AR* took the position of synthesizing the cool, continental prescriptions of CIAM (Congrès Internationaux d'Architecture Moderne) and the home-grown progressive traditions of Raymond Unwin and Thomas Sharp, which were more consonant with the vernacular socialism of the Arts and

Crafts movement of the previous century.

The Concise Townscape was first published in 1961, based on a series of drawings and articles Cullen had produced for *AR*. Having collaborated with Ian Nairn on *Outrage* and *Counter Attack*, two *AR* tracts published in the mid-'50s on the ravages of "subtopia" and the banality of modernity, Cullen in *Townscape* builds on the theme of restoring the principles of the picturesque, the creation of an urban "set" within which the drama of humanity can unfold. His seminal concept in this argument is his coining of the term "serial vision," the revelation of urban space as experienced by a pedestrian in motion, represented in narrative storyboard.

Cullen's drawings are exquisite, some tight and highly stylized, others much looser. As a design primer fortified by case studies from Cornish fishing villages and Italian set pieces, the text, drawings, and photographs serve to remind us of the basic elements of design vocabulary and syntax — wall, floor, closure, change of level — that in combination constitute a "townscape." As an argument for humanistic urban design, however, the work is remarkably devoid of humans. Compared with Michael Sorkin's 2009 *Twenty Minutes in Manhattan*, a "serial vision" of the walk to work (without illustration), Cullen's formulation as counterpoint to Modernism today seems limited and lifeless.

In this respect, Cullen's philosophy reflects a too-common weakness in the profession that the intervening 50 years have been unable to correct: an esoteric introspection consumed with a fetishism of form that fails to address for whom, by whom, and for what buildings and towns are built in the first place.



STREETS FOR PEOPLE:
A PRIMER FOR AMERICANS
By Bernard Rudofsky
Doubleday, 1969
Van Nostrand Reinhold, 1982

Bernard Rudofsky's 1969 *Streets for People* paints a bleak picture of American cities. In it, Rudofsky asserts that this is largely due to a strong anti-urbanist streak in American history and development. His

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forecast for American cities is grim: "There is no reason for thinking the next forty years will be different in spirit from the past forty years…"

What leaps out to the American urbanist of 2010 is how much has in fact changed in our attitudes toward cities in the last 40 years.

Rudofsky's compendium of wonderful cityscapes is illustrated with terrific photos and compelling descriptions. His heartfelt respect for pedestrians and delight in great urban environments is inspiring. Many of the (mostly European) cities he loves and discusses had not yet been overrun by cars in the 1960s. (Many of them have since gone through periods of car culture.) However, Rudofsky's utter disdain for American cities and culture is so pervasive that it is difficult to listen to the good advice he has to offer.

Reading *Streets for People* is like swallowing a pill for what turns out to be the wrong diagnosis. Rudofsky focuses on New York, the American city he most loves to hate, selecting evidence to support his premise that the city is headed for chaos. Rudofsky's context was a time when New York's crime rate was growing steadily (a trend that continued until the early 1990s). Today, we see a city where crime rates are lower than ever recorded, and we can view New York through the lens of almost 20 years of steady improvement in the quality of life. Indeed, New York has become a national model, actively and aggressively improving the pedestrian environment and reclaiming street space from cars and returning it to walkers and bicyclists.

Offputtingly, many of Rudofsky's comments seem designed to make any city-loving reader immediately buy a ticket elsewhere: "Many Americans regard ugly cities as an asset"; "American city dwellers live by the law of the asphalt jungle"; "For Americans, the viewing of undisguised brutality fills the same need that Romans felt for watching gladiatorial combat. There is no danger that this source of emotional excitement will run dry; the crime rate is rising steadily."

Rudofsky selectively documents American anti-urbanist sentiment and leaves little room for optimism. Happily, his prediction was wrong. The last 40 years have seen great changes in the way Americans think about, build, and live in cities. Although our cities have far to go to truly achieve "streets for people," many American cities are now paying attention to pedestrians and striving for walkable neighborhoods.

Read Rudofsky to admire his wonderful photos and descriptions of atmospheric and charming urban environments, but take heart that his assessment of our inability to learn from the past and think beyond the automobile was overly glum.

Wendy Landman is the executive director of WalkBoston (www.walkboston.org).



BY GRETCHEN SCHNEIDER AIA, LEED AP

Covering the Issues

The gold in copper... Ben Bayntern's "The Wire," the cover story of ***Bloomberg Businessweek*** (November 29–December 5, 2010), reads like a police drama. Since 2001, metal theft has spiked in the US, increasing as much as 1,000 percent. Bayntern reports that "gangs use foreclosure lists like treasure maps" as they hunt for pipes and wire. Copper is easily recycled and difficult to trace; international prices have quadrupled in this decade. The even larger problem is that $1 in stolen copper causes $10 to $25 in associated repairs. Typical targets are small churches (often empty) and boarded buildings, while more industrious thieves mine infrastructure such as cell towers and municipal irrigation systems. Cities are trying to crack down, revising scrap recycling laws while creating new police undercover metal-theft units. These officers operate as construction detectives and display an increasingly impressive knowledge of pipe fittings.

Sea the future... In one of the more interesting annual summaries, ***Popular Science*** features its "100 Best Innovations of the Year" (December 2010). From an uncomplicated bucket that helps trees grow in inhospitable places to extreme engineering that allows skyscrapers and airports to be unimaginably taller and earthquake resistant, there's lots to gawk at here. But the coolest award winner draws inspiration from humble ocean creatures. In the 1980s, marine biologist Brent Constantz learned how to mimic the way sea coral grows. Recently, he has developed a bioengineered coral-like product that can replace limestone in building cement mix by using sea water and the byproducts of existing power-plant smokestacks. A California demonstration plant is underway, making 1,800 tons of coral cement daily. The US Department of Energy reports that cement's conventional production — which requires extreme heat to prepare limestone — is the second largest source of carbon-dioxide emissions in the US after fossil fuel. A Google search shows that Constantz has his skeptics, but the potential impact of coral concrete is stunning.

Inside story... In a fascinating essay disguised as a book review, James Fenton ("The Age of Exuberance," ***Harper's***, January 2011) provides thoughtful, detailed musings on the Gilded Age and late-19th-century residential interiors. He paints a picture of what these living spaces were and what they meant, with their excess of dark paint, textures, and patterns. Ceilings were heavily timbered and colored, for example, a reminder that they provide shelter. A number of these interiors still exist in Upper Manhattan (read: Harlem) brownstones, protected, in a way, by decades of poverty. Yet as this neighborhood undergoes its own renaissance, the future of these Gilded Age interiors is in question. Fenton argues that the whole interior ensemble — ceiling, rugs, drapery, decorated walls — is important and emotionally powerful, as he laments their inevitable destruction. Lofts are nice, he suggests, but they don't belong in brownstones.

Chia Pets on the loose... If it's in ***Time***, it must be a trend, right? In "Upwardly Fertile: The Rise of the Vertical Garden" (December 13, 2010), Tim Newcomb discusses the growing popularity and one-upmanship of "vertical gardens" — exterior walls covered by a hanging carpet of plants, like the widely published one at the new CaixaForum in Madrid, Spain. Purportedly demonstrating environmental awareness (or at least a "green" company image), installations are getting bigger as



they crisscross the globe. The current North American title was captured by Philadelphia's Longwood Gardens in October with a 3,600-square-foot wall, while Santiago, Chile, unveiled a 17,000-square-foot wall in December. Yet these walls are less energy efficient and more expensive than a green roof. Newcomb touches on the inherent contradiction of the "green-ness" of these planted surfaces, suggesting that their ongoing maintenance requirements mean that a vertical garden should be considered a "very large and thirsty pet" rather than a building material. ■

Gretchen Schneider AIA, LEED AP is the principal of Schneider Studio in Boston.

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http://library.duke.edu/digitalcollections/dsva

In the 1970s and '80s, Barbaralee Diamonstein-Spielvogel conducted a series of interviews with architecture's Who's Who. Her video archive is now online, all streamed to YouTube, featuring luminaries such as Edward Larrabee Barnes, Louise Nevelson, Robert Venturi and Denise Scott Brown, and — of course — Ben Thompson.

PROJECT FOR PUBLIC SPACES

www.pps.org

So you want to create a great public space? This internationally renowned organization, founded in 1975 and based on the work of urban planner and sociologist William H. Whyte, can help, with blogs, books, workshops, and photos of great places. The Hall of Shame features strong opinions and lively discussions.

MARIMEKKO

www.marimekko.com

Ben Thompson introduced Americans to Marimekko, the Finnish maker of clothing and textiles that are equal parts attitude, pattern, and color. Founded in 1951, it's still going strong.

THE HARVARD SQUARE BUSINESS ASSOCIATION

www.harvardsquare.com

Since 1910, the HSBA has "cared for the Square." From daily events and current news to photo archives (including thoughtful explanations of significant spots such as D/R) and "Eye Level Tours," this practical website guides you to the best of the past and present of this favorite Red Line destination.

BOSTON AND ITS NEIGHBORHOODS

www.bu.edu/library/guides/boston/images.html

This Boston University research guide is an extraordinary, annotated list of links to online image databases that deal with Boston. Note the citation for "Reviving Boston's Marketplace," an illustrated publication by Ben and Jane Thompson about the redevelopment of Faneuil Hall Marketplace. Whether conducting scholarly research or simply curious, start here.

MASS MODERN/MODERN MASS

www.modernmass.com

So you want your own Six Moon Hill or Five Fields abode? Or maybe you already live in one and wonder what others look like? This blog by a Lexington-based real estate agent includes an interesting array of current photos, as well as historical ephemera.

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www.faneuilhallmarketplace.com

"Experience a festival every day!" A rule to live by. ■

Harvest

Ben and Jane Thompson's entrepreneurial spirit spawned several restaurants around Boston. The most influential of these, Harvest, opened in Harvard Square in 1975. Some of the city's most famous chefs have passed through its kitchen — and many credit its early days with almost single-handedly sparking the culinary revolution that led to Boston's vibrant food culture.



v Photo © 1976 Steve Rosenthal.

Lydia Shire
Chef and owner of Locke-Ober, Scampo and Blue Sky; culinary director of Towne Stove and Spirits

Julia Child used to dine at Maison Robert, where I was the chef of the dining room. When Ben and Jane Thompson asked her to recommend a chef for their restaurant, she told them they should talk to me. I spent nine months at Harvest in 1975. I did it all: ran the kitchen, cooked on the line, wrote the menus, did the daily specials, hired, fired, you name it. What I loved the most was Ben and Jane Thompson. They were such forward thinkers and brought out the best in me. They challenged me to be creative and cook from the heart. Jane would bring in vegetables from her garden; I remember the recipe for blueberry syllabub she gave to me.

Frank McClelland
Chef and owner of L'Espalier and Au Soleil Catering; co-owner of Sel de la Terre

I worked at Harvest between 1978 and 1981, beginning when I was 22. By the time I left, I was executive chef. I started the rotisserie and spit grilling out in the terrace and, boy, did we cook everything: wild boar, lamb, shanks of veal. The restaurant was way ahead of its time. We were so experimental. We made our own pasta and bread. We bought from small farmers. We grew herbs in the windows and did our own pickling. We wrote menus that ran for two weeks and had multiple specials every day for both lunch and dinner. So we all learned how to *create*. Harvest had a reputation for developing really great cooks because of all the creativity Jane and Ben allowed there.

Barbara Lynch
Chef and owner of Menton, No. 9 Park, Sportello, Drink, B&G Oysters, The Butcher Shop, Stir, and 9 at Home

I worked at Harvest for about four months when I was 21 years old and came back a couple of years later when Chef Patrick Bowe took over. It was a great experience! I loved making the Irish soda bread and learned how to make pâtés and terrines. I was garde-manger, and it was a great start to my cooking career before I went to Michaela's and worked under Todd English.

Sara Moulton
Cookbook author, TV personality, and former executive chef of *Gourmet*

While I was a student at the Culinary Institute, I had to do an externship and was hired to work a night shift at Harvest. This turned out to be one of the most important things that happened to me in my career. While I was working the cold station, Lydia Shire, the very hands-on executive chef, was working the line. When my shift ended, Lydia would ask, "Do you want to come over and hang out with me and watch what I do?" It was great not just to have a woman mentor, which was a rarity back then, but also to get a one-on-one tutorial from one of the very best chefs in the country.

Chris Schlesinger
Chef and owner of East Coast Grill

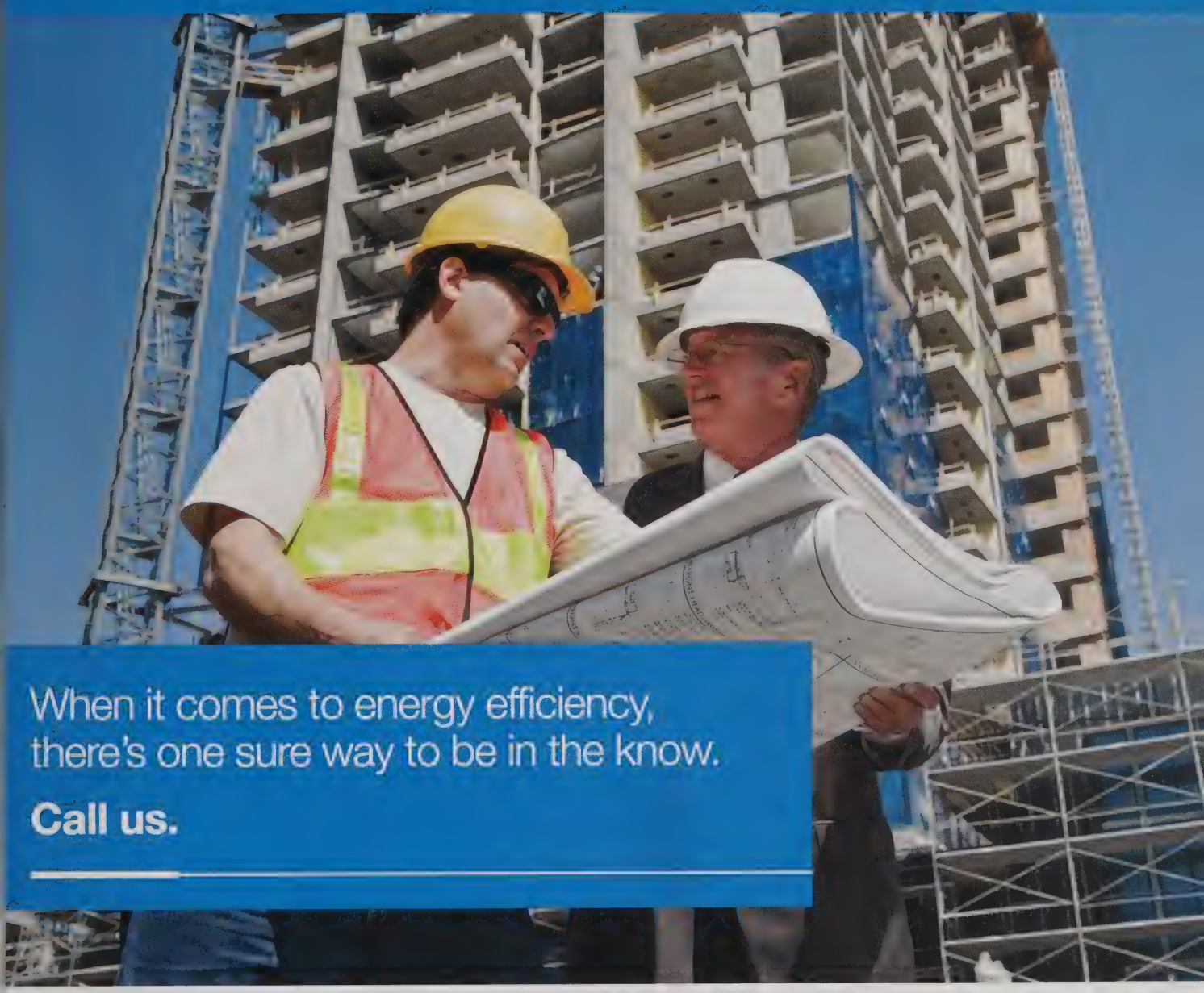
I worked at Harvest in the late 1970s and early '80s, when I had just graduated from culinary school. After service, the cooks, bartenders, and servers would go out to talk about food and wine. We'd go to the library to read and research. Ben Thompson had sent the chef then — Jim Burke — to France for a couple of months. We'd call France and order a bunch of stuff, drive out to the airport to pick it up and then, back at the restaurant, lay it all out on the table and try to figure out what to do with it. We were all under 25 and running this restaurant. It produced some of the best food of the times and also some of the worst. ■

Genevieve Rajewski writes about food for *The Boston Globe* and *Edible Boston*

For extended interviews with Harvest alumni chefs, go to: www.architectureboston.com.

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Government Issue

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Detail, *Effects of Good Government on the City Life*, fresco painting by Ambrogio Lorenzetti, 1338–40.

COVER
Photo: Bear Cieri

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Project: The Harrison Center Institute, Nelle Lane Cty, UT.

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Step Right Up

Think of all the architects you know who have run for public office.

Maybe you know Harvey Gantt FAIA, the oft-cited mayor of Charlotte, North Carolina, who twice ran unsuccessfully against Jesse Helms for the US Senate. He's been out of office since 1987. Or Richard Swett FAIA, the congressman from New Hampshire and later the US ambassador to Denmark from 1998–2001. He was the only architect to serve in the US Congress in the 20th century. Or maybe you know one of the eight architects—including Massachusetts' Chris Walsh AIA—who are currently serving as state legislators, according to the AIA.

For a profession that is so deeply committed to the public good, the numbers are puzzling. Certainly, countless architects are working within all levels of government, but their presence hasn't correlated with elective office beyond local positions such as planning boards and conservation commissions. Yet most architects have some streak of idealism, an inherent optimistic sense that the world can be improved, which is why Howard Roark is an imperfect portrait of the profession: even the most apparently egotistical architects are sometimes simply those with the most unyielding vision of what constitutes the public good.

When it comes to public service, the architecture profession might be even more extreme than the Millennials, whose capacity for volunteer activity has already dubbed them the next "greatest generation." Among the 18- to 29-year-olds polled in a recent survey by the Harvard Institute of Politics, 69 percent agreed that community service is honorable, and one-third have performed some sort of community service in the past year.

Now consider the architects you know. If your circle of acquaintances resembles mine, it's pretty hard to come up with anyone, of any age, who hasn't done some sort of community service, either in the form of public boards and commissions or active participation in a nonprofit. And in most cases, this activity represents lifelong dedication that can't be discounted as a cynical effort to plump up a résumé or college application.

You can't be elected if you don't run. But even if the scrimmage of electoral politics is somehow less appealing than negotiating change orders, architects can still make real, substantive contributions to the civic process. As government struggles at all levels to cut costs, to do more with less, architects must step up to offer their expertise on some of the most pressing issues: housing, economic development, infrastructure, sustainability, energy consumption. It's time for some creative thinking.

Close readers of *ArchitectureBoston* may notice some changes in this issue. "Upfront" is the new moniker for an expanded "front of the book" section that includes opinion and observation pieces in addition to reviews of exhibitions and events. Book reviews and "Site Work" are together called "End Notes" to underscore their function as continued commentary on each issue's theme. The "At Issue" feature serves as an introductory exploration of the theme. Our design has been tweaked, too, both to accommodate these changes and to allow more editorial and graphic flexibility, such as more effective use of margins for notes and reader resources.

Countless architects are working within all levels of government, but their presence hasn't correlated with elective office.

With this issue, we are also launching a new website—www.architectureboston.com—where you can find all our print content as well as exclusive online features. We hope you will visit often, both to comment on stories and to discover new material that will be continually added even after the print version has landed on your desk.

These changes are the most obvious manifestation of a process that began a year ago when we first incorporated some minor editorial and design updates. We anticipate additional fine-tuning in the coming months and welcome your reactions and comments. In this, *ArchitectureBoston* is much like the city that is its home: the product of an evolutionary process that is never complete. ■

Elizabeth S. Padjen FAIA
Editor





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On "Ben" (Spring 2011)

What a wonderful tribute to Ben Thompson! Thank you! He certainly brought joy to a huge number of people.

It was interesting to see mention of Bernard Rudofsky's *Streets for People* in the same issue. Somehow Ben was able to get some of the mounted photographs from Rudofsky's 1964–65 Museum of Modern Art exhibition, "Architecture Without Architects," which traveled to each of the then-existing D/R stores—Cambridge, New York, and San Francisco. The lesson to me, at the time a salesperson in the San Francisco store, was that there is also design without designers—that good design is the result of good thinking not just by designers but by anyone who is thoughtful about how we live. Although many of the products D/R sold were created by "name" designers, many were made by talented craftspeople and manufacturers from around the world who believed in making things of lasting quality and usefulness. How many of us still treasure items we purchased from D/R many years ago for what then seemed a bit beyond what our pocketbooks could bear!

LU WENDEL LYNDON
Placewares+LyndonDesign
Gualala, California

Reading your rich issue dedicated to Ben Thompson brought me back to the wonderful years I spent working for him in the mid-'60s, first as his assistant at the Harvard Graduate School of Design and then as a public-relations/speech-writing person at BTA. I was in my mid-20s, recently moved to Cambridge after growing up in conservative Boston—and what a learning experience it was! People, creativity, and celebration: They all came together in those three-projector slideshows flashing images of glorious architecture, food markets, and flowers to the music of Sonny & Cher and Simon & Garfunkel.

As your articles said, Ben was a genius in bringing people together in surroundings that made them feel at ease, playful, and creative.

CLARA WAINWRIGHT
Cambridge, Massachusetts

The idea that a building represents a "legacy" is often suspect. Buildings and their uses change over time; their original design intention becomes subject to misinterpretations due to evolving trends and lifestyles and, worse, over-intellectualization. This is particularly true of retail projects which, by nature, have a shortened half-life and must be renewed every few years in order to stay viable in the marketplace.

Retail projects worked well for Ben Thompson because he had the same need to stay fresh. He was constantly changing them. And he was also constantly changing his studio/office. Ben had a habit of placing something new and fresh on his secretary's desk almost every morning. It might be a flower or a photograph or a piece of folk art, or simply a colorful fall leaf that he had collected on his walk to work. This was emblematic of the way he was constantly refreshing the studio with new, colorful furniture and fabrics, beautiful large-format photographs, and products of the "in-the-works" design processes for the wonderful projects and special clients that he also seemed to attract. Ben also "collected" the people around him. He attracted those who had a particular artistic bent or a way with words—people who had creative impulses and multiple skills. He didn't have an office of architects as much as a cast of characters who covered the waterfront, from writers and editors to food preparers and model makers.

Ben also employed a full-time photographer and photo librarian to help him put together his famous three-projector slideshows. These were not highly edited client presentations—they were colorful, artistic collages that filled Ben's little windowless black box theater with wall-to-wall, floor-to-ceiling extravaganzas of light, color, and sound, meant to inspire creativity in himself and everyone else. Studio presentations, whether for a client or just the design team, were similar exhibitions of colorful drawings, models, and mock-ups, put on with a combination of rehearsed precision and improv.

Here is Ben's real legacy: Very often, I will run into someone whom I worked with at BTA. If we find ourselves alone in an elevator or walking down the street, we will reminisce about the studio, or the Harvest, or D/R, and we will inevitably marvel at the very creative and inclusive environment that Ben had created and conclude that it must have been rare, because there seem to be no firms today that even approach that level of artistic and creative stimulation. At one such encounter recently, as we parted, my colleague said, "Do you miss the old BTA studio as much as I do, after all these years?"

Yes, I do.

JIM VAN SICKLE
Cambridge, Massachusetts

As the successor owner of Ben Thompson's D/R building, I was one of the many who regarded Ben as a friend. Often when we met in the Square, he would ask me where I was going on my next trip. He would invite me to his office, show me slides of doorways, back streets, small parks. He helped me understand the soul of the city I was about to visit.

When Ben wanted to open the Harvest restaurant in my building next door in 1975, he showed me a sample menu he had drawn with sketches of half lobsters and champagne glasses. When I told him that I doubted whether those would be big sellers in Cambridge, he switched easily to a discussion of Harvest burgers, meatloaf sandwiches, and house wines, as well as the type of wood he wanted to use in constructing the bar.

Recently I was in Shanghai, sitting in the D/R Bar, an oasis in a renovated building in the middle of an exploding and fractionated metropolis. As a teacher myself, I began to think about Ben's role as a teacher. He taught by example. There were few boundaries between his professional and personal lives. To him, buildings were more than a collection of bricks and mortar, certainly more than numbers on a spreadsheet. They were an opportunity to share with others his view of the importance of a community, where people could work together productively and share joyfully and openly in the many pleasures life can bring. I thank *ArchitectureBoston* not only for putting together such a delightful and comprehensive series of vignettes covering Ben's life and the influence he had on so many of us but also for reminding us of what seems to be missing in what has become an increasingly polarized world.

WILLIAM J. POORVU
Cambridge, Massachusetts

Many thanks for bringing Ben back to us! He is my hero, and because I once worked with Scott Wilson, one of Ben's former associates, I still use many of his techniques (colored yarn, pins, game cards) in interactive charrettes with my clients. They shift the discussion away from making an "object" to making a "container for activity."

I just have one small comment on "About Joy." The article misses Ben's point, which is: we don't *think* joy, we *feel* joy. Remember the awe of the cathedral, the sense of community of the street market, the warmth of the home? Sensuousness is the great, ineffable quality of architecture. Ben got it and tried to teach it in his "Ode to Joy" speech to the AIA. If only more of us could hear it (feel it, smell it, and en-*joy* it)!

TAMARA ROY AIA, LEED AP
Senior Assoc. Principal, ADD Inc
Boston

I left a recent presentation by Jane Thompson at the pinkcomma gallery excited again about the potential for a design community and collaborative practices. I was comforted by her emphasis on the contextual necessity for designers to work toward a larger social goal. Jane explained BTA's role as one of facilitators and not dictators: "We are not the decorator," she stated. "We provide the space, and (users) fill it as they see fit."

As a young follower of the Tillian dictate that "mess is the law" [Jeremy Till, *Architecture Depends*, MIT Press, 2009], I have embraced the notion that our creations are not pristine—they are intended to be used and lived in. The willingness to relinquish a stranglehold on a project and embrace a community-based design strategy involving other designers along with clients and users shows restraint and communal care.

This continued emphasis on community made the event's location at pinkcomma that much more appropriate. As a young designer arriving in this city without any allegiances or connections to local institutions, the gallery has provided me a welcoming home. I scanned the gallery space to see my friends and colleagues as Jane spoke warmly about BTA's history the way a family member might reminisce about childhood memories, and recognized that Boston and other cities need more spaces like this, devoid of institutional allegiances, that allow the design community to gather in welcome and not exclusion.

The collaborative approach that Ben and Jane Thompson's work emphasizes reminds the community of young designers that the struggle to grow as creative practitioners is not meant to be undertaken alone. Not only that, but the fact that this struggle transcends generations provides the comfort that the goals we continue to pursue are not new but are part of a larger search for holistic design integrity.

JONATHAN HANAHAN
over,under
Boston

We want to hear from you. Letters may be e-mailed to epadjen@architects.org or sent to *ArchitectureBoston*, 52 Broad Street, Boston, MA 02109. Letters may be edited for clarity and length, and must include your name, address, and daytime telephone number. Length should not exceed 300 words.

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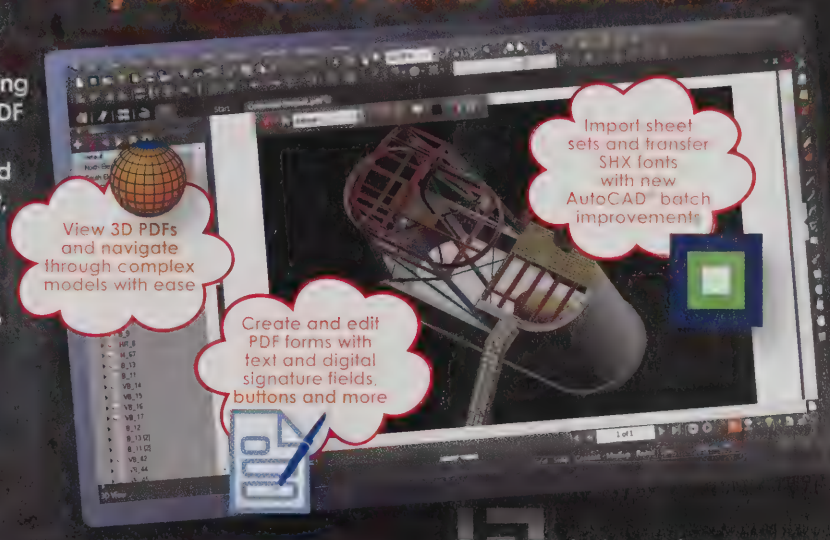
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LEFT
Lounge chair, 1934. Designer: Gerald Summers. Manufactured by Makers of Simple Furniture. Photo: Museum of Modern Art

Alfred Zollinger is the director of the Design Workshop at Parsons The New School for Design and is co-principal of Matter Practice, an architecture and exhibition-design firm that maintains its own prototyping and custom-fabrication shop in Brooklyn, New York.

Plywood: Material, Process, Form

Museum of Modern Art, New York City
February 2, 2011–ongoing

So you think you know plywood? Although the show's title promises an examination of this modern material, *Plywood* is mostly a display of mid-20th-century furniture. Bound by the stage-like installation in the Architecture and Design gallery, this show similarly lives on a single conceptual platform: like many exhibitions by the Architecture and Design department, it is a selection from MoMA's extensive collection organized around a theme. *Plywood* is a good teaser, and a visit may feel like a wonderful reunion with well-known older friends to whom you have come to pay your respects.

Not much is new here, as several of these iconic furniture pieces can be seen at any Design Within Reach store. One of the few exceptions (and the smallest piece in the show) is a patent model for a one-piece plywood chair from 1873 by Isaac I. Cole. Who knew, or remembers, pre-Eames or pre-Saarinen plywood chairs? Yet it is the nonfurniture objects—such as a bow, a propeller, and a pair of skis—that speak of the flexibility of this material and its many possible applications. This is what makes plywood so fascinating.

The show lacks a binding agent—like the glue that holds together the many layers of wood veneer that make plywood—to meld the multiple readings that the title suggests. The unlabeled black-and-white photographs of other seminal plywood pieces and processes help but are not enough. We can only hope that this is a probe for a larger future exhibition that will delve more deeply into all the layers that make up this intriguing material and the designs it continues to inspire.

Pamela de Oliveira-Smith is a writer in Boston.

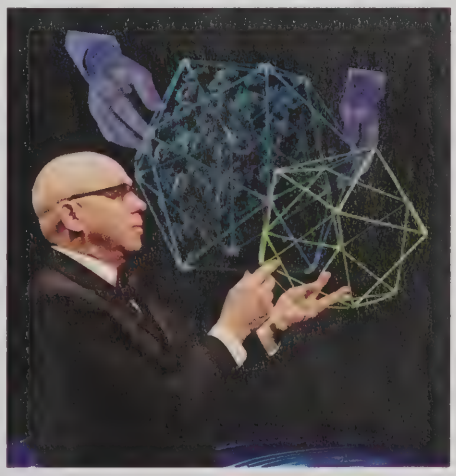
R. Buckminster Fuller: The History (and Mystery) of the Universe

American Repertory Theater Cambridge, Massachusetts
January 14–February 5, 2011

We know him as Bucky. Buckminster Fuller—American inventor, designer, writer, engineer, and utopian futurist—was a benevolent genius who wanted to save the world.

In a one-man show at the American Repertory Theater, actor Thomas Derrah makes Bucky adorable, dynamically delivering a motherlode of ideas in a performance that balances ecstatic optimism against lugubrious poignancy. Derrah succeeds at communicating even the most complex and esoteric notions by putting his heart first, making clear that Bucky's intellectual fireworks were fueled by love for the environment, his family, and the rest of humankind.

While the ART stages Bucky's life sparely, using a couple of chairs, a desk, a few tiny geodesic dome–like baubles, and a sometimes-successful multimedia backdrop, the script could have been tightened. A second act felt wrong in a performance meant to honor a man who wanted the world to do more with less.



RIGHT
Actor Thomas Derrah as Buckminster Fuller. Photo: Marcus Stern



Seen

1111 Lincoln Road Parking Garage, Miami

David Carlson AIA is senior architect at the Boston Redevelopment Authority and executive director of the Boston Civic Design Commission.

ABOVE
The completed parking garage (the crane was required for completion of the interior construction of the developer's penthouse unit). Photo: James Cornetet AIA

I would have ignored 1111 entirely had it not been on a shuttle-bus route from the Miami Beach Convention Center to the downtown hotels. Even then, it seemed a bit of an embarrassment, as if a derelict structure had been inhabited by squatters who added partitions and struts to hold the whole thing up, much like the 2-by-4s supporting the palm trees planted in front. I would not have been surprised to see laundry waving fitfully from the cables. It looked like money had run out for some developer.

I was taken aback to learn later that this was not only planned but also considered a "cutting-edge" design by the renowned architects Herzog & de Meuron. It's mixed-use: you can drive up and park to visit a restaurant, retail shop, or residence or to attend one of the parties or events held on the parking decks after hours. It's transparent: there are almost no walls and some *very* high ceilings. It's clever: the developer used a zoning loophole to match the height of the neighboring building. And it's apparently very well lit, judging from the glamorous evening photos that appear in the press.

I get all that. The lighting, the views, the sense of space on the high floors, and the taut steel cables that almost invisibly restrain cars at the edge of the decks … OK. The titillating sense of inhabiting a space that is somehow off limits—like a Roman ruin, or a Piranesian print, or a building under construction—is understood.

But this looks unfinished. The exotic quirks diminish in daylight. It shares almost precisely the massing of its older midcentury neighbor, which exacerbates the sense of a dream deferred. And to conceive of a structure that exalts the car in an age when we might more wisely be thinking along opposite lines seems an utter waste—much like the irony of sustainability seminars at a frigidly air-conditioned convention in Miami Beach on a hot June day.

Received

Books by Local Authors

Small Scale: Creative Solutions for Better City Living
Keith Moskow FAIA and Robert Linn
Princeton Architectural Press, 2010
Moskow and Linn have collected dozens of small projects that activate the human-scale spaces and define our urban experience. Frequently overlooked for grander visions, the work included provides insight and delight, and serves as a rallying cry to a new generation.

House in the Landscape: Siting Your Home Naturally
Jeremiah Eck FAIA
Princeton Architectural Press, 2011
A sustainable house design requires more than the latest green materials: it starts with a sophisticated understanding of the site. Eck presents case studies of projects by leading architects, illustrated with beautiful photographs.

Martha's Vineyard: Contemporary Living
Keith Moskow FAIA and Robert Linn
Monacelli Press, 2010
The title suggests a lifestyle guide, but the authors are really presenting a new regional design vocabulary. Featured projects marry the scale, palette, and restraint of New England vernacular architecture with Modernist minimalism. A book as lush as the houses within—and as ambitious.

Roller Coaster Symphony: An Architect's Journey
Wilson Pollock FAIA with Bruce Lynch
Design Leadership Press (PSMJ), 2010
Part memoir, part how-to, frequently entertaining, and always informative, this behind-the-scenes account of the growth of ADD Inc by its nationally respected founder and former CEO is a roadmap to a career in architecture. They don't teach this stuff in school.

Architecture as Revolution: Episodes in the History of Modern Mexico
Luis E. Carranza
University of Texas Press, 2011
A professor at Roger Williams University, Carranza offers a fresh understanding of Modernism within the social, cultural, and ideological context of Mexico in the early-20th century.

Letter From Idjwi

Democratic Republic of Congo

Dan Sullivan completed his MArch degree at the Harvard Graduate School of Design in January 2011 and is continuing to work on interdisciplinary strategies for introducing healthcare infrastructure to the Eastern Congo.

Photos online: www.architectureboston.com

We were dropped into chaos at the Port of Goma. Or, more accurately, our driver could not move any farther into the crowded street. So we each began lugging the 40 kilos of clothing and equipment that would support us over the next month on Idjwi Island, a three-hour boat trip away.

We are a group of seven graduate students representing four of Harvard's professional schools: public health, medicine, government, and design. Our goals for Idjwi are to perform a baseline health survey; develop a body of ethnographic and experiential research; and use that information to propose improved healthcare delivery, including designs for new healthcare facilities.

I wonder: How does an American designer responsibly work in this place? How does one respond to genocide; or comprehend the impact of introducing the first Internet connection where most buildings have no electricity; or understand how a visitor's innocent actions reverberate after departure? How can architecture deliver solutions for violence and poverty?

Hospital planning requires analysis of data such as disease prevalence, distribution of existing facilities and population, and the technical aspects of disease transmission. Yet the data that architects usually collect is of the ethnographic sort: examining how a culture uses buildings and public spaces, and what political, cultural, religious, and personal biases affect that behavior. In the case of this project, our interdisciplinary student team means that scientific *and* ethnographic approaches can be integrated, creating what we hope will be more effective outcomes.

Immersion in Idjwi's daily life was our way to collect accurate information. On Wednesdays and Saturdays, we hiked 12 km to the market to buy our food. We haggled for vegetables and then carried the goods back, up and over the hills. Only by walking those roads did we begin to understand the challenge for a woman in labor to travel from home to the hospital. Only by visiting the remote villages did we understand the real impact of isolation.

As word spread that we were doing research to construct a hospital, local residents started collecting rocks for the structure's foundation, even though we weren't ready to build. Now, one year later, our team is still synthesizing our data; the project is ongoing; our recommendations and designs are forthcoming. I am committed to the people of Idjwi and haunted by the words of King Rubenga: "You're not the first group to come here wanting to help, but most people then go back and forget about us. Please don't forget about us. Please come back. Please do something."

We return this summer.

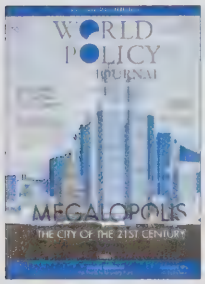


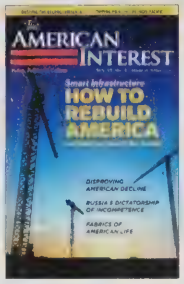
Focus

Painted Over

Aaron Dougherty AIA, LEED AP is a fine-art and architectural photographer in Kansas City, Missouri. His "Painted" series highlights brick, concrete-block, and metal-clad buildings—everyday, industrial buildings seemingly made deliberately more anonymous, even invisible, by coats of paint. www.aarondougherty.com

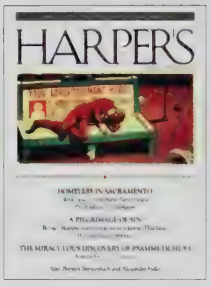
Online slideshow: www.architectureboston.com











Covering the Issues

Gretchen Schneider AIA, LEED AP is the principal of Schneider Studio in Boston.

The really big city... ***World Policy Journal*** (Winter 2010/2011) tackles "Megalopolis: The City of the 21st Century," speculating especially about the rapidly urbanizing areas of Asia and Africa. In "The Architect and the City," the editors talk with architect Didi Pei—son of perhaps the most famous Chinese-American architect—about his firm's work in China, discussing population migrations, politics, cultural paradigms, and the implications of creating cities in a single generation. Meanwhile, in "Urbanity, Revisited," graphic designer and thinker Bruce Mau argues that even the most technologically advanced cities that we're designing today are based on outdated models, as if we're attempting "to re-build Paris … everywhere."

Bridging the divide... ***The American Interest*** (March/April 2011) provides a collection of articles around the theme "Smart Infrastructure: How to Rebuild America (Without Breaking the Bank)." For a nondesigner's perspective, check out "Re-imagining Infrastructure" by Mark Gerencser, a vice president at Booz Allen Hamilton. While outlining the known problems of structurally deficient bridges and dams, contaminated water pipes, and an overloaded power grid, Gerencser observes that the underlying issues are ones of finance, management, and planning as much as invention, engineering, and construction. Leadership matters most. Gerencser presents a series of simple but important ideas: Government and private interest are interconnected; infrastructure must be understood as single, complex systems spanning multiple jurisdictions, rather than products of isolated fiefdoms; new systems must be designed with change in mind; and we need a clear, national vision.

Coming your way... Heat-releasing walls? Bird-friendly windows? Liquid glass? In "Material World" (***Fast Company***, March 2011), Rachel Arndt offers a brief but fascinating snapshot of these three innovative products. The walls incorporate a solid core that absorbs excess heat if the room is warmer and releases it if cooler. The windows are modeled on spider webs and include UV patterns that are visible only to birds. The "glass" is a spray-on microscopic silicon-based coating that is resistant to bacteria and easy to clean, and is proving especially popular in hospital applications. You can't find these at Home Depot now, but you probably will some day.

Not quite there yet... Considering a rooftop windmill? ***Slate*** author Amy Westervelt suggests that you wait a while. In her "Rooftop Pipe-Dream" blog post (February 12, 2011), Westervelt reports on the runaway trend in rooftop windmills. Prompted by big tax credits in the federal stimulus act and promoted by positive media stories, more than half of current rooftop capacity has been built in the past three years. The problem? Much of this huge rise in "small wind" doesn't yet match the hype. Many of these recent rooftop units simply don't work, or they don't work enough. To produce useful power, rooftop units must receive continuous wind over five miles per hour, which in most city settings—with cell towers, and buildings, and other urban obstacles—is simply impossible. In fairness, industry self-regulation has begun, with the first certified turbines (guaranteed to meet certain performance criteria) due out in June. Or, reconsider a tall tower windmill. So long as you have an acre of land.

No place like home... In an unsentimental reminder that the first role of architecture is shelter, writer William T. Vollmann offers a sympathetic portrait of homelessness for ***Harper's*** (March 2011). Vollmann begins his "Homeless in Sacramento: Welcome to the New Tent Cities" chronicle as a tolerant building owner with a parking lot, on which he allowed squatters to camp. Vollmann's humanity grew into curiosity, as he, too, started to seek shelter at squatters' settlements, sleeping on rocky ground and concrete floors. While still a fiction—Vollmann had a home to return to—this rare, in-depth investigation includes a discussion of Safe Ground (a movement to protect the homeless), the sometimes conflicting mandates of police and park rangers, the history of itinerant towns, and the mosaic of common "solutions." Perhaps most important, he humanizes homelessness.

Women and Modernism in Landscape Architecture

Harvard Graduate School of Design
Cambridge, Massachusetts
February 17–18, 2011

Why convene a symposium devoted to female landscape architects? The goal, according to Charles Waldheim, chair of Harvard's landscape architecture department, was to "reinvest" in landscape. Keynote speaker Thaisa Way, author of a recent book on the subject, set the stage by profiling an impressive 85 female practitioners in one hour. Arguing that neglectful historians have obscured the proliferation of women in Modern landscape architecture practices, Way challenged historians to move beyond monographic biographies to study constellations, or collective histories. Yet singular women were very much on display the following day.

Friday's biographical morning focused on scholarship pertaining to six women and their practices, and provided context for a compelling autobiographical afternoon, when Rosa Grena Kliass, Cornelia Hahn Oberlander, and Carol R. Johnson presented their own work. John Beardsley, a landscape historian and author, joined the three stars for a concluding panel discussion during which differences in ideology and methodology eclipsed the predetermined common ground of gender and Modernism. For instance, in addressing public-sector design, Kliass works on the premise that she knows what the client needs, Johnson solicits community participation when appropriate, and Oberlander advocates, "Be a good neighbor at every scale." Each is greater than the sum of her projects by virtue of her contributions to reforms or revolutions in education, professional organizations, and ecological design. The values are worthy, the achievements laudable.

Occasions such as this *can* contribute to the landscape canon, historiography of the landscape architecture profession, and landscape studies if they are well attended, which this one was not. (About 45 people were present at any given time.) If the Harvard Graduate School of Design is to challenge the canon, emphasize landscape history, and elevate landscape architecture—all of which were mentioned throughout the course of the symposium—then it also needs to underscore the obvious triple jeopardy of the words "women," "Modernism," and "landscape" that undermined this event. But is it helpful to profile women to mostly women? Perhaps the profession would be better served by generational and gender inclusivity and interdisciplinary points of view.

Nina Antonetti **PHD** is an assistant professor of landscape studies at Smith College and author of *Activism by Design: The Art, Science, and Stewardship of Cornelia Hahn Oberlander* (forthcoming).



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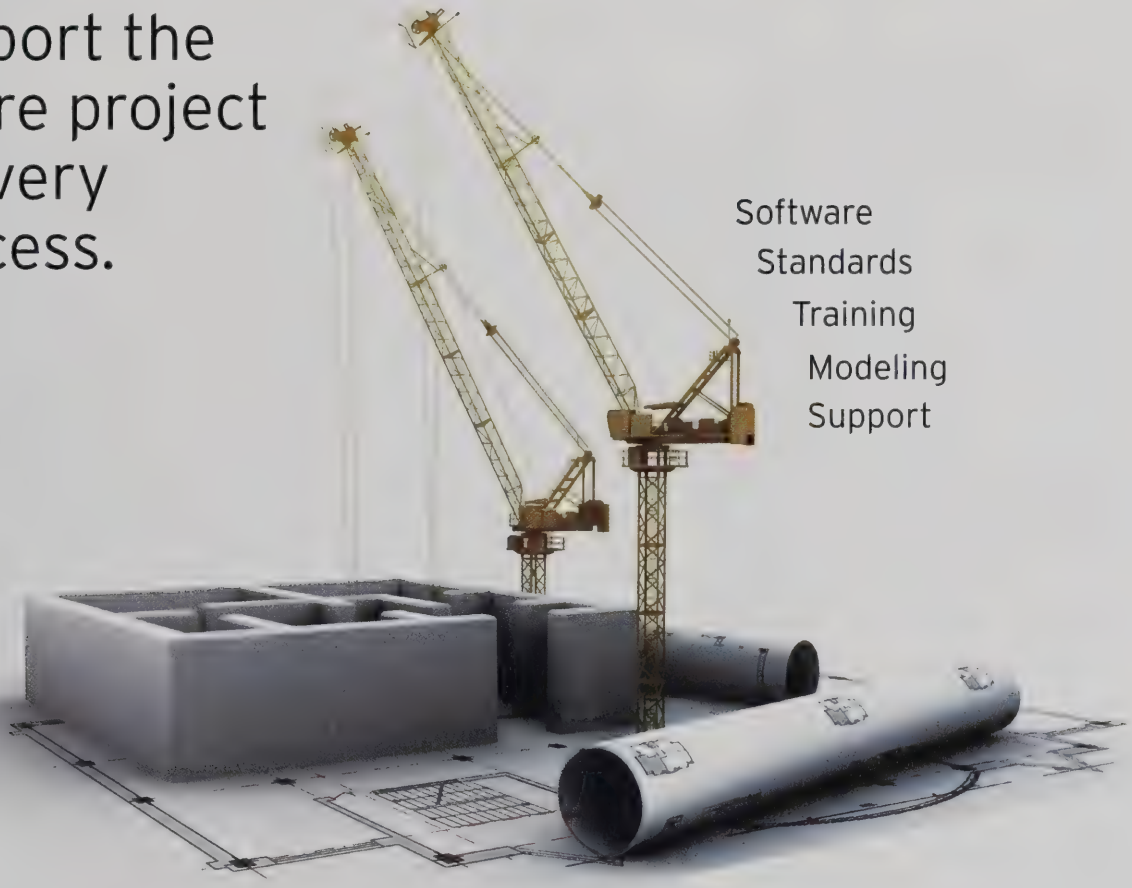
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Notes From the Suggestion Box

From-the-trenches ideas for fixing government and fixing the economy



One-Stop Shopping: Reorganizing the Oversight of Construction Codes

Picture this: As a last step to getting your certificate of occupancy, you and your general contractor are performing the final walkthrough with the local fire inspector. The inspector happens to look up and notes that a carbon monoxide detector needs to be installed on the ceiling above you and that a fire extinguisher is required at the end of the hall. You nod in agreement but mentally recall that your code review found no requirement for either a CO detector or a fire extinguisher in those locations. Furthermore, you know the inspector personally signed off on your design months ago before your general contractor pulled the building permit. You silently recognize that the ensuing occupancy delay will not be easy to explain to your client, nor worth the aggravation. When you return to your office, you call your general contractor and direct him to install the additional items.

If you are an architect, you can probably relate to this scenario. You may even have thought, Wouldn't it be great to have some predictability in code enforcement or, barring that, an understandable, uniform appeals process? For that matter, wouldn't it be great to have a coordinated set of construction codes that have a predetermined schedule for updates and revisions? Why is it so hard for the state to do this?

Under the current Massachusetts regulatory system, nine separate boards and two state agencies promulgate construction codes related to: buildings; elevators; fire prevention; fuel gas and plumbing; electrical work; accessibility; boilers; public health ("sanitary"); drinking water; sheet metal; and pipefitting, refrigeration, and sprinkler fitting. With the exception of sanitary and drinking water, which are each regulated directly by one of two state agencies that report to two separate secretariats (executive offices serving directly under the governor), the remaining nine boards report to one of two separate departments that in turn report to two different secretariats. If this sounds confusing, it is. In all, four different secretariats have jurisdiction over Massachusetts state construction codes.

Recognizing the problem, Governor Jane Swift established the Building Code Coordinating Council (BCCC) in 2002. The BCCC, comprising all the construction code promulgating boards, was charged with resolving the problems of inconsistency, redundancy, and conflict within the various competing codes. This was the first time all the boards and state agencies actually sat in a room together to discuss code development. Although their charge was clear, the members of the BCCC chose not to retroactively address issues predating its existence and therefore left a variety of problems in place. As a result, architects have often been caught in this code conflict "crossfire."

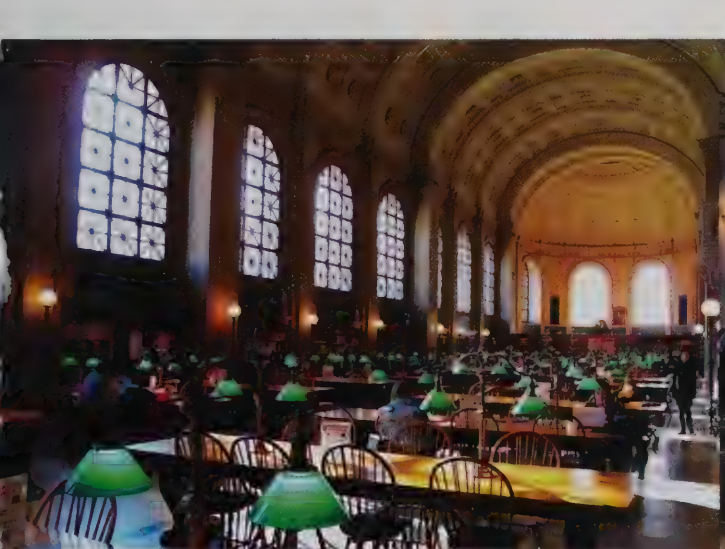
In 2007, state senator Richard Moore proposed legislation that would consolidate some of these boards and agencies under a single department overseen by a single secretariat. Unfortunately, the legislation died in committee because of an incorrect perception that it would affect previously negotiated union employee benefits packages.

With the 8th edition of the building code going into full effect in February and a 9th edition in the works for 2013, a new accessibility code due by the summer of 2011, and continuing jurisdictional battles between building officials and fire officials, the time may be right for a new version of Senator Moore's legislation. By moving the 11 separate boards and state agencies under the charge of a single secretariat that can provide clear decision-making authority, the entire construction industry has the potential to finally move toward some predictability in enforcement, the establishment of a uniform appeals process, retrospective coordination of the codes, and a set, predetermined schedule for code updates and revisions.

John Nunnari, ASSOC. AIA is the executive director of AIA Massachusetts.

OPPOSITE
Photo: Tim Davis, courtesy of the artist and Greenberg Van Doren Gallery

PHOTO SERIES
Traces of Government
Although government might be an abstract idea, its presence can be seen everywhere.
Photos (left to right): Terry Miller, Jeffrey Engel





We Can Do Better: Rethinking Chapter 40B

Chris Walsh AIA is the Massachusetts state representative from the 6th Middlesex District.

PHOTO SERIES
Traces of Government
Photos (left to right): Rachel Haller, Jeffrey Engel

Architects will probably agree that affordable housing is an important part of the community puzzle; a good mix of affordable housing options for people of different income brackets has been the El Dorado of housing advocates, architects, and community planners since the 1950s—with sometimes spectacularly disastrous results. The question to be asked, however, is if we in Massachusetts are really achieving that goal by our policies. The Comprehensive Permit Law (Chapter 40B) was enacted in 1969 to help address the shortage of affordable housing, concurrent with the discrediting of the conceptual thinking behind many large urban housing projects, such as the Columbia Point project in Dorchester.

As of 2009, only 51 of the 351 communities in the Commonwealth had reached the 10 percent threshold of affordable housing required by Chapter 40B; that is less than 15 percent of our cities and towns, even after 40 years—a pretty dismal statistic by any accounting. This number is actually worse than it might seem, as three-quarters of the units in a typical 40B project count as "affordable" even though they are actually "market rate"; only one-quarter are actually deed-restricted as affordable units. Since most of the state's efforts to create affordable housing are through 40B legislation, it's easy to see why Massachusetts is losing ground proportionately to other states in creating true affordable housing: we are building expensive units at a 3-to-1 ratio in every 40B project. Moreover, starting in 2010, the deed restrictions on about 53 percent of the "affordable" units began to run out, so these units are reverting to market rate, moving many communities even further away from meeting the 10 percent goal without massive new building projects.

Because the incentive through the Department of Housing and Community Development promotes new building projects rather than the renovation of existing housing stock or programs that "pioneer" blighted urban areas, 40B projects have been eating up open space in the semirural areas and suburbs at an alarming rate. The program has thus become in reality the antithesis of good planning, sustainability, and Smart Growth; the American Planning Association has gone so far as to single out 40B as the "most regressive planning legislation in the country." With 40B's ability to sidestep planning boards, site-plan reviews, and other planning safeguards, communities often swallow the poison pill of unwanted or unneeded growth in an attempt to retain minimal control over their own zoning laws and infrastructure costs. Municipalities often underwrite the cost of 40B developments with infrastructure projects and services without receiving a corresponding increase in revenue.

As a means of advancing affordable housing in the communities, 40B is a failure; as a tactic to promote sustainable and "smart" building practices, it is a failure; and as a strategy to create high-quality, livable, and equitable communities, it is a failure.

If the Commonwealth shifted its focus away from new construction to more sustainable redevelopment strategies, we would be able to mitigate the substantial inefficiencies of our older housing stock, better utilize and even expand the existing public transportation systems, reinvigorate the traditional urban centers, promote flexible uses such as accessory dwelling units for our seniors, and preserve the minuscule open space and habitat that remain—all at what appears to be a fraction of the cost of what we are spending per unit of actual affordable housing. Our desire to achieve affordable multitiered and high-quality communities is not advanced by the aggressive attitude that 40B engenders, and it should not be the business of the Commonwealth to give over the rights of a public community for the benefit of private developers. We can do better, both for our communities and for our citizens.





The Homeowner's Ace in the Hole: Accessory Dwelling Units

Homeowners walloped by the one-two punch of a listless economy and mortgage malaise are finding windfalls in the most unexpected places: in garages, attics, basements, backyards, and anywhere else there's room to create accessory dwelling units (ADUs), commonly known as "in-law suites" or just "in-laws."

The surge of interest in ADUs is spurred by the many virtues of these cozy digs, most of them well under 1,000 square feet—the maximum allowed in many Massachusetts towns. There's a lot to like, especially for boomers who now have elderly parents needing care, an underfunded retirement to put back on track, or adult children who have boomeranged back home. Homeowners with a little extra space can create a secondary dwelling to meet these needs or to generate income as a rental property.

This housing option meets so many needs, in fact, that scores of cities and a handful of state governments have revised statutes to encourage the creation of ADUs. In California, residents can create second units "by right." Portland, Oregon; Vancouver, British Columbia; and Santa Cruz, California, go even further, offering residents a choice of preapproved ADU plans to save money and streamline the process. Even red-state governments are getting in on the act: Miami and El Paso, Texas, have recently adopted form-based codes, which smile on second units.

ADU statutes offer one area of governance where the liberal can lie down with the libertarian. That is, private homeowners who create ADUs also increase the pool of affordable housing. What's not to like?

But as desirable as ADUs are, they frequently run into the brick wall of zoning—a patchwork of NIMBYism more fueled by fear than informed by fact. Too often, zoning codes adopted in the 1920s and modified in the 1950s serve the needs of a world of cheap oil, open land, and nuclear families—a world that is fast fading into memory. These outdated codes would be quaint, but for the harm they do to today's diverse households, which need flexible housing choices such as ADUs to weather economic storms and provide for their families. Even when ADUs are allowed, as in many Massachusetts towns, tenancy is too often limited to actual family members, and the units must revert when they are vacated. Ultimately, this lack of choice hurts all of us: The AARP estimates that, "on average, Medicaid dollars can support nearly three older people and adults with physical disabilities in home- and community-based settings for every person in a nursing facility."

So what should be done by local and state governments?

Face the facts. We're poorly served by exclusionary, single-family-homes-only residential zoning. To cite just one example, the US now has the highest percentage of single-parent households among industrialized nations, and too many of them live in underused spaces that could be put to productive use.

Educate the public. ADUs are a commonsense housing option. Discuss ADUs in public meetings and have architects on hand to answer questions. Concerns about noisy tenants and property values are often mollified when ADU zoning provisions require owners to live on the premises.

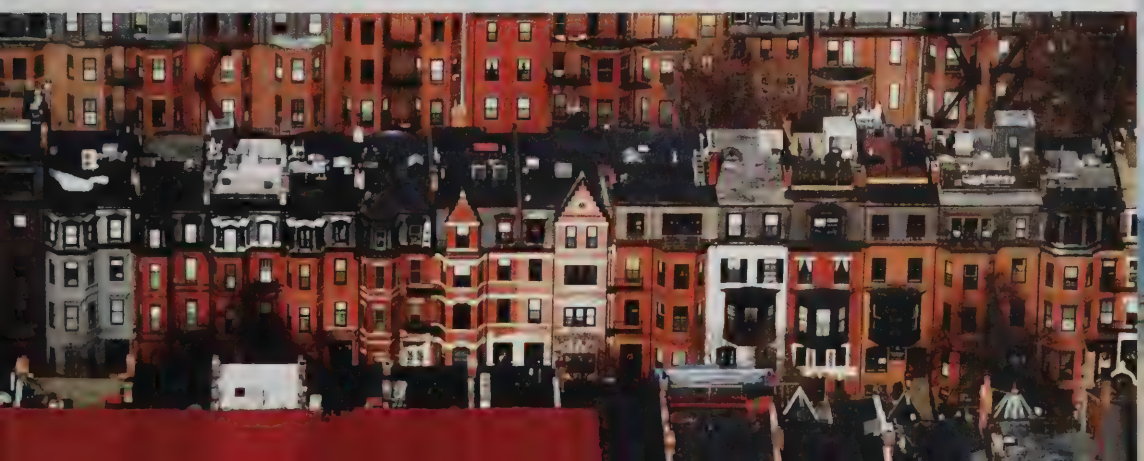
Take it step by step. Lexington, Massachusetts, had no provisions for ADUs till 1984, when they were first envisioned as renovations benefiting elderly people in big houses who needed care or companionship. In 2005, when the town rewrote its bylaws, ADUs were allowed in new construction as well, and lot size requirements were reduced.

Offer amnesty programs for existing units. To ensure that ADUs meet local building codes, towns have periodically waived fees and penalties on un-permitted units if they are inspected and brought into compliance.

There are many good reasons to modify zoning and regulations to allow and encourage ADUs. But in the end, one stands out: Government should help people help themselves.

Michael Litchfield is a founding editor of *Fine Homebuilding* magazine and the author of 10 books on home renovation and design, including most recently *In-Laws, Outlaws, and Granny Flats: Your Guide to Turning One House Into Two Homes* (Taunton, 2011). A former Vermonter, he presently lives in an ADU created from a pair of farm outbuildings in northern California. www.cozydigz.com

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Traces of Government
Photos (left to right): Jen Murray, Alicia Carlson





Mapping, Measuring, Metering, Managing: An Environmental Monitor

A. Vernon Woodworth AIA, LEED AP, is the chair of the BSA Codes Committee and active in the development of the International Green Construction Code.

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Photos (left to right): Anton Spaans, Paul Keleher

You can live free or die in some parallel universe. But here on Spaceship Earth we have to get real—in a hurry. We have to care enough about the reality of energy, emissions, ecosystems, and biodiversity to be monitoring these flows, processes, and interfaces constantly, meticulously, fanatically.

Economists do it. They watch every penny, every trend, every hiccup in the marketplace. Why do we care so little about our natural and man-made environment that we throw away energy, air quality, ecosystems, and biodiversity like so much refuse, unworthy of our regard? Imagine the effect of daily news reports of a Worldwide Environmental Health Index, understood at a gut level, much like the Dow Jones Industrial Average, as a predictor of our well-being.

Computers and the Internet have arrived just in time. Technology now allows us to generate, digest, collate, and share data collected from all sources.

Imagine: Every application for a building permit will be online, and the data on economic activity, building use, construction materials, lifecycle costs, ecological footprint, and code compliance will be incorporated into an ongoing electronic numerical assessment of our environmental trajectory. BIM files submitted for permits will be incorporated into an increasingly accurate and comprehensive model of the built environment. The model will track actual energy use and other building-operations data (such as solar heat gain, moisture content, and air quality) using sensors and meters installed in accordance with applicable code requirements. (This model will also facilitate evacuation and emergency response in the event of a fire, an earthquake, or other disaster).

Imagine: Transportation, public and private, will report similar metrics. Grocery-store scanners will contribute shipping and consumption data; and required manufacturer's reporting will provide lifecycle information. Planning decision makers and investors will have instant access not only to economic investment trends and infrastructure status but also to ecosystem health, soil acidity, and water temperature and salinity. Google Maps and similar programs will include overlays of zoning, conservation, and planning regulations, with links from street addresses to data on construction-permitting activity. Policymakers will have real-time information about investment in the built environment and environmental health, and will be able to identify trends and trajectories that will inform future planning decisions.

With the exception of a database of permitting information and links to codes and regulations, these ideas depend on the private sector—the realm of supply and demand—to provide the technology to produce and gather accurately measured and reported data. The worst-case scenario is insular governmental data collected at its own pace and for its own purposes. But a structure of regional data collection that acknowledges weather and watersheds as well as homebuilding and habitat, that is tracked beyond jurisdictional borders, requires a public/private partnership of unprecedented proportions. The business model is murky. Where will the investment capital come from? How can government regulations requiring private parties to collect data for public use, monitor building energy use, and track environmental consequences, become profit centers?

In fact, many of the pieces are in place, requiring only a kick-start from a government pilot program or adequate incentive to start the ball rolling. Building energy monitoring will become a universal mandate under either state or federal programs within this decade. (San Francisco has already done so.) Centralization of building-permit data (following universal electronic application processes) is an inevitable market-based development with enormous beneficial implications for both the private sector and the public good. IBM's "Smart Planet" initiative has the scope, if not the particulars, of these ideas in its sights. Architects, planners, and environmentalists can fill in the blanks from the demand side, as we continue our trajectory toward utopia or oblivion.



Ripple Effect: A Green Gateway City/Creative-Economy Tax Credit

Of life's two great inevitabilities, only one is an instrument of public policy. Taxation, the primary means to our government's ends, defines the nature of the relationship between the public authority and private enterprise.

Real estate development has a profound and lasting effect on the quality of the public realm, but it is not a fundamentally altruistic activity. When government wishes to influence real estate development, it must rely on either regulation or incentive to extract a benefit (such as universal accessibility) that it sees as having a public good equal to the private benefits being created.

One of the modern tax instruments that are most effective in promoting private development is the tax credit. A tax credit is just that: permission granted by the government to subtract a sum of money from taxes owed. It is more valuable than a tax deduction in that it directly reduces taxes on a dollar-for-dollar basis.

As a stimulus, tax credits work very well: programs targeting historic preservation, affordable housing, and "new market" development in distressed areas are all considered successful. When projects become feasible through tax credits, the benefits extend not only to the public realm but also to a huge chain of people in a variety of industries such as architects, construction workers, vendors, and material suppliers.

In Massachusetts, tax credits have been used primarily to retain and support industries, such as life sciences, that improve our economic competitiveness. The recent film-industry tax credit has seemingly transformed Boston overnight into a Hollywood set—although the net public benefit of a subsidy that amounts to 25 percent of a film's entire production cost is debatable. As a videogame-industry tax credit receives serious consideration, we should imagine incentives that would have a greater impact on the health of our communities.

Massachusetts has an opportunity for just such an incentive—an even more innovative application of the tax-credit tool that would support three sectors that have been the recent subjects of public-policy concern: sustainability, the Creative Economy, and the Gateway Cities.

Sustainability is a matter of economic competitiveness as well as a greater public good. Recent initiatives have addressed both green building and Smart Growth—how and where we build.

The Creative Economy has recently been recognized as one of the state's most significant industry sectors: With 3,100 design firms employing 44,500 industrial, graphic, fashion, exhibit, and landscape designers as well as architects and engineers, Massachusetts is home to one of the largest design communities in the nation. But most Creative Economy firms don't *need* to be here; their work is often exported to clients around the world, and they are famously nomadic in their search for inexpensive real estate, preferably in urban areas.

The Gateway Cities are 11 former mill towns identified by MassINC and the Brookings Institution. (See *ArchitectureBoston*, Summer 2009.) Largely left out of the state's economic growth in recent decades, they are now considered key to a new statewide Smart Growth strategy.

Individual tax credits could promote each of these sectors. But by combining them, Massachusetts has the opportunity to promote sustainable Smart Growth with economic development. With a Green Gateway City/Creative Economy Tax Credit, Creative Economy Districts could be designated within the Gateway Cities; bonus tax credits could be allocated for projects meeting thresholds for green redevelopment of existing buildings.

Design businesses thrive when in close proximity with similar firms; when located in districts, they also promote investment and stabilize our urban centers. A Green Gateway City/Creative Economy Tax Credit would be the key to a truly enlightened Smart Growth strategy for Massachusetts, tipping the balance for economic investment where it is needed most, and providing an economic ripple effect for citizens across the state. ■

Michael Davis FAIA, LEED AP, is co-chair of the AIA Massachusetts Government Affairs Committee and public policy commissioner on the board of directors of the Boston Society of Architects.

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Photos (left to right): Doc Searls, John Sie Yuen Lee



What I Learned: An Insider's Guide to Improving Local Government

by James G. Kostaras AIA, AICP



Local government in America is in trouble, and I have some modest proposals to fix it. I also have a few scars and bruises to show for a 20-year career in municipal government as an architect and urban planner with the Boston Redevelopment Authority (BRA) and later as executive director of the Somerville (Massachusetts) Office of Strategic Planning and Community Development. When government works efficiently to meet the aspirations of the citizens, it's an inspiring enterprise. But the coming fiscal crisis will break local government.

Writing in *Forbes*, Joel Kotkin says, "In the next two years, America's large cities will face the greatest existential crisis in a generation." Wall Street investors are in a panic. What happens when nervous investors in the $3 trillion municipal-bond market decide that lending to cash-strapped local government is a risky bet? Smaller cities in Massachusetts are in triage mode as they struggle mightily to provide services in the face of budget cuts, staff reductions, and cuts in state aid—reducing the core functions of municipal government to police, fire, schools, and streets. More daunting are the unfunded pension obligations of municipal workers, exploding health-insurance costs, and the diminishing property-tax revenue due to a battered real-estate market.

Local government faces another critical crisis: most Americans don't trust government. "Politics have poisoned the well in terms of trust in government," according to Andrew Kohut, director of the nonpartisan Pew Research Center. Americans trust politicians about as much as they esteem Goldman Sachs bankers. The pathetically low voter turnout in local elections reflects the sentiments of cynical, disillusioned citizens.

To improve local government, we must see it for what it really is and how it actually functions. I started my career in local government at the BRA not long after returning from Morocco, where I had served as a Peace Corps architect building rudimentary health clinics and community buildings. In the Peace Corps, I was a pragmatic idealist; after 20 years in municipal government, I turned into a somewhat idealistic pragmatist. Machiavelli, in *The Prince*, justified duplicity as a means to power; nevertheless, he told truth to power as he saw it, emphasizing realism—or *realpolitik*—over idealism. A realist sees local government as a collection of competing interests. Government, like other organizations, is made up of individuals striving to pursue their own conflicting self-interests.

Solving local government's most critical fiscal problems is beyond my pay grade. What follows, however, are some modest "fixes" to local government.

Don't trust government.

In my experience, local government runs better and is more efficient in delivering services when it's not trusted—provided that politicians and their operatives understand and appreciate that they are not trusted. So don't trust government, and let politicians and public-sector managers know this. Keep them on their toes. You will actually be empowering the best-intentioned people in government to do the right thing and putting less-than-well-intentioned people on notice that they are being scrutinized. I confess that, even when I was *in* government, I often didn't trust government—or have full confidence that elected officials and political operatives would use the apparatus of government to serve the interests of average citizens rather than those of politically connected interests. I felt like an embedded insurgent waging guerrilla war to advance the public interest. I learned early in my career that you can't serve the public interest unless you're willing and prepared to be fired from your government job. A skeptical citizenry can give aid and comfort to the insurgents.

Reconfigure local government around a strategic mission.

Political geographer and urban planner Edward Soja argues that: "Of all the sectors of contemporary life, government and forms of governance have probably changed least. This has made it increasingly difficult to respond democratically and effectively to the many problems arising from the enormous concentration of population, wealth, and power in a small number of megacity regions." Local government needs to be reconceptualized from time to time. The organizational chart of departments within municipal government should reflect a strategic mission. From my insider's point of view, municipal government can become calcified with departments and staff organized to solve yesterday's problems. A critical fix is to engender a bias for rethinking and rearranging the organizational structure of government around clear missions.

When I was the executive director of Somerville's Office of Strategic Planning and Community Development, I believed our mission required a different kind of org chart. Somerville typifies, in microcosm, the

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OPPOSITE
Photo: Darin Mickey

A realist sees local government as a collection of competing interests.

problems and challenges of big cities: new gentrification resulting in displacement of low-income families, a large low-income population, a community of immigrants that constitutes almost half the city's population, large swaths of environmentally degraded former industrial properties, and decades of economic disinvestment. With the support and encouragement of Somerville mayor Joe Curtatone, I organized a 65-person, multi-operational development agency by merging several unlikely city departments—zoning, the building department, historic preservation, parks, economic development, and housing—into an integrated development agency and gave it a new name, the Office of Strategic Planning and Community Development (with an emphasis on "strategic"). We structured the agency around the execution of a clear mission: to attract investment into the city and plan for the redevelopment of a large area of vacant and underused industrial land. Consolidating city functions into one department—not unlike the 1960s Boston Redevelopment Authority—has proven to be a good platform from which to revitalize Somerville's economy.

Let people in local government be more entrepreneurial.

Create a culture in government that will attract creative, committed, and idealistic people. Value and encourage a bias for entrepreneurship and experimentation in government workers to counter the political pressures, entrenched parochial interests, and other disincentives.

Leadership sets the tone. My former boss, Mayor Curtatone, urged us to "be abnormal," signaling that he valued people with provocative ideas that challenged convention. In 2005, Somerville was our laboratory for innovation and experimentation in urban policy.

I took a page from the cutting edge of the private sector and ran the Office of Strategic Planning and Community Development like a design firm or an Internet start-up—a radical departure in ossified municipal government. I recruited talented, young professionals to join me in planning and launching a bold strategy to transform and "reinvent" the city. I gave them room to be creative and take initiative and the flexibility to make their own schedules—another departure from the 9-to-5 (and not a minute more)





punch-the-clock culture in local government. We got results. In less than three years, my staff launched a major economic-development strategy, attracted more than $900 million in anticipated public and private investment, and secured the state's commitment to build the Green Line transit extension and transit-oriented development (TOD) corridor through Somerville. In the process, we positioned Somerville in metropolitan Boston's globalizing economy as a place for innovation and creative industries by advancing provocative architecture and urban design. My staff re-envisioned Somerville and advanced the idea that architecture and urban design could be leveraged as a means of attracting new investment and dynamic development.

Architects should be mayors.

This is not ego-stroking for design professionals. It is a clarion call. Architects (as well as landscape architects, urban designers, and planners) should be mayors of cities, elected members of city councils and boards of aldermen, and chairs of elected planning boards. In light of the coming crisis, local government will require the precise competencies that architects offer. The electorate, worn down by the current nasty, divisive political gamesmanship, is yearning for positive inspiration and will demand it in the future. Architects know how to inspire people. There are precedents for architects serving as successful and transformative mayors. Jaime Lerner, an architect and former mayor of Curitiba, Brazil, launched a revolution in city building. Today, Curitiba is a model of sustainable 21st-century urban planning recognized by UN-HABITAT and UNESCO.

Imagine if members of the Boston Society of Architects (BSA) were mayors of cities in Massachusetts. With the resources and the political power afforded by government, BSA architects could advance the impressive civic-minded BSA initiatives over the years, such as *The Civic Initiative for Smart Growth*. My recommendation to architects and associated professionals: fundraise, form PACs, press the flesh on a campaign trail, and run for local office.

Even in crisis, local government is where democracy is most direct and tangible in the average person's everyday life: educating kids, making the streets safe and clean, approving new zoning, issuing building permits. Crisis brings out creativity and builds resilience—provided creative government workers are allowed to be entrepreneurial and are not stymied by narrow political interests. Therein lies the problem—but also the opportunity—in local government. ■

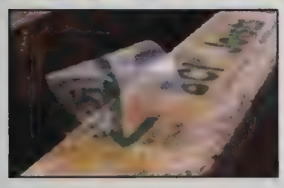
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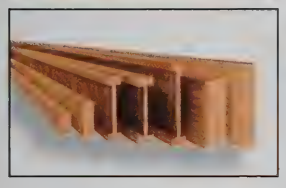
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The Shadow Government

With little public oversight, the organization that invented the LEED system is remaking an industry.

by Michael Liu AIA, NCARB



In October 2010, Henry Gifford, perennial scourge of LEED, filed a class-action suit against the US Green Building Council (USGBC) in US District Court, citing a heady mix of allegations including monopolization through fraud, deceptive trade practices, and unjust enrichment. (Gifford also included an allegation of wire fraud for good measure.) A mechanical designer and contractor, he purports that the USGBC's claims of improved energy performance of LEED-certified buildings are unsubstantiated and that the organization has defrauded the public with a system that promotes implementation of expensive green technologies while positioning itself as a lucrative fee-generating monopoly. He has since amended the complaint to one of false advertising and deceptive trade practices, maintaining that he and other professionals implementing alternative sustainable strategies have been harmed.

While *EcoBuilding Today* has tartly observed that Gifford is no Rosa Parks, it was perhaps inevitable that the emergence of the USGBC, a nongovernmental private organization, and its LEED rating system as the dominant arbiter of sustainability would come under challenge. The shrill original allegations aside, at its core, the case raises the question of whether it is appropriate for a private fee-generating nongovernmental organization to assume what amounts to a regulatory role in the building industry.

Certainly examples of government regulators relying on private profit and not-for-profit institutions abound, both in the certification of professionals and in the promulgation of standards. Few would quarrel with the role of organizations such as ASTM International (formerly American Society for Testing and Materials) or American National Standards Institute (ANSI) and the incorporation of their standards in countless governmental regulations. In fact, the National Technology Transfer and Advancement Act of 1996 requires the federal government to use such privately developed "consensus" standards where possible. Other organizations whose varying degrees of self-interest are generally not questioned also come to mind: the National Fire Protection Association is one, Underwriters Laboratories is another. The difference between these institutions and the USGBC is that while government regulators rely on the standards, regulations, and research such organizations produce, the USGBC has become, in effect, a regulator itself.

On a federal level, LEED certification has been adopted as either an outright requirement or a programmatic goal by any number of governmental agencies including four branches of the armed forces, the General Services Administration, the State Department, and the Department of the Interior. At least nine states require actual certification for public building projects, while another half dozen, including Massachusetts, are presently considering such requirements. Still others do not require certification but promote the use of LEED guidelines or encourage certification by offering tax credits or other incentives. Many municipalities and some county governments also require certification. Countless private institutions, such as the Partners HealthCare system, pursue LEED certification of their building projects as a matter of policy. For projects over a certain size, Boston requires building projects to be LEED "certifiable," which is a significant distinction in that it adopts the standard but not the process.

The issue then is not the LEED rating system, the virtues and shortcomings of which can be separately discussed, but the process of certifying buildings and the creation of a fee-generating bureaucratic structure to do so. Along with this has come the creation of a new class of professional to administer that process and, as of 2008, the creation of the Green Building Certification Institute (GBCI), a separate subsidiary organization to grant, administer, and maintain the accreditation of these new professionals. It is the accreditation of LEED professionals in particular that has evolved into an ever more elaborate administrative process.

Proponents of the building certification process argue that the USGBC's LEED system offers what other programs do not: disinterested third-party verification that buildings live up to points claimed under the rating system. Disinterested in this case means a private non-governmental entity.

Recent embarrassments to the Energy Star program, which was created and is administered jointly by the Environmental Protection Agency and the Department of Energy, argue in favor of such third-party non-governmental verification. The vulnerability of the Energy Star program to fraud was tested by the Government Accountability Office (GAO) last year. The GAO, not usually known for its comic flair, submitted and won Energy Star certification for several bogus products including an "air purifier" constructed of a space heater with fly paper and a feather duster attached.

On the other hand, compliance with the building code is administered and monitored by public servants, relying in part on their oversight and in part on the professionalism of the architects and engineers who must certify the compliance of their designs. To date,

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The issue is the process of certifying buildings and the creation of a fee-generating bureaucratic structure, along with a new class of professional to administer it.

there has been no movement to privatize the review and issuance of building-permit applications, and it is hard to imagine that it would be considered a good idea. The Massachusetts building code includes an energy code and, within the energy code, provisions to build an admittedly crude energy model via Comcheck or similar software programs. The "stretch code," an adjunct code adopted by 63 communities at the time of this writing, raises the energy-savings bar and requires a more sophisticated energy model. Such programs determine whether the proposed design passes or fails. They don't particularly raise the consciousness of the designer or owner with regard to sustainability issues, but they do have the advantage of being straightforward.

Another rigorous governmentally administered energy compliance process is the Massachusetts Environmental Protection Act's (MEPA's) Greenhouse Gas Emissions Policy and Protocol of 2010, which applies to all projects that require an Environmental Impact Report. The MEPA process, which considers many of the same sustainability issues addressed by LEED but is more design-oriented, also involves the construction of a sophisticated energy model, based on one of the same computer modeling programs used in the LEED process.

Unlike the MEPA process or the stretch code, LEED follows the life of a project from inception through construction, requiring ongoing documentation and adjudication of points (functions that could be added to the governmental processes). This can be considered either more effective or more cumbersome, depending on one's point of view, but certainly it requires a greater degree of bureaucracy on both the reviewer's and proponent's behalf. Such a bureaucracy, however, does not necessarily require administration by a separate and new class of professional, the creation and maintenance of which is perhaps the most controversial aspect of the USGBC program.

The certification and licensure of professionals is a function that has long been contracted out to nongovernmental organizations to varying degrees. Doctors, lawyers, and hairdressers all have to pass examinations that are developed by private organizations under governmental oversight. The problem of self-declared professional certifications is that the

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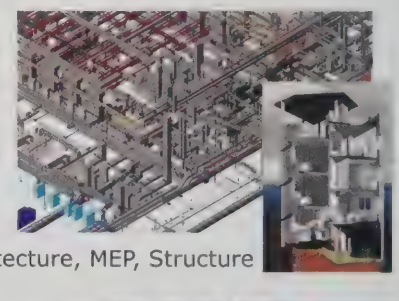
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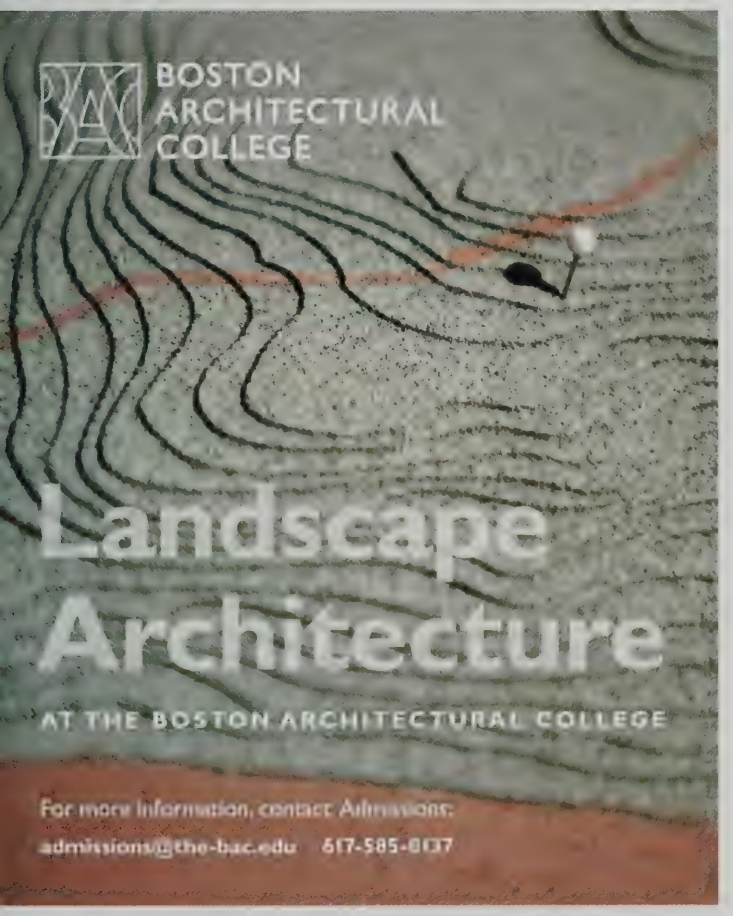
organizations that create and regulate them tend to become ends in themselves.

As first conceived, the LEED Accredited Professional (AP) was a generalist, having passed a one-time examination that granted a LEED point in the rating system and allowed the individual to use the LEED AP credential indefinitely. After July 2009, however, new LEED AP designations (LEED AP+) were granted within five specialties. To maintain the accreditation, the individual was obliged to either pass biennial exams or, more likely, participate in continuing-education programs via USGBC's Credentialing Maintenance Program (CMP). The continuing-education program for a single specialty is 30 hours over a two-year period, graduated to a maximum of 54 hours if a candidate is accredited in all five specialties.

The rigors of maintaining multiple specialties seems designed to winnow the field of prospective candidates, especially among rank-and-file practicing architects, engineers and contractors. Some legacy LEED APs, those generalists who were accredited prior to July 2009, speculate that their designation is destined to be phased out altogether. The prospect then is that LEED AP+ accreditation becomes less generalized throughout the design and construction industry to become a distinct occupation. It is telling that up to 50 percent of possible continuing-education hours can be granted for giving presentations, serving on committees, and authorship related to LEED programs, activities one would associate with a full-time sustainability consultant.

In addition to specialization, a tiered accreditation program was introduced. Now candidates can be accredited as a LEED Green Associate (the required precursor to a LEED AP+), a LEED AP+ or, soon, a LEED Fellow, which parallels the AIA designation. According to the GBCI, the LEED Fellow is its "new and most prestigious professional designation." It seems fair to ask whether so much administrative complexity and hierarchy actually advances the cause of sustainability.

Since the 1980s, Americans' distrust of government has been expressed as contempt, perhaps justifiable, of its inefficiency. The privatization of roles formerly the province of government was celebrated as the remedy and has remained received truth in American political thinking ever since. However, although the USGBC's LEED system has done more to bring the cause of sustainability into the public consciousness than any other, perhaps the time has come to revisit that assumption in the case of a private regulatory body that is not answerable to governmental authority. ■

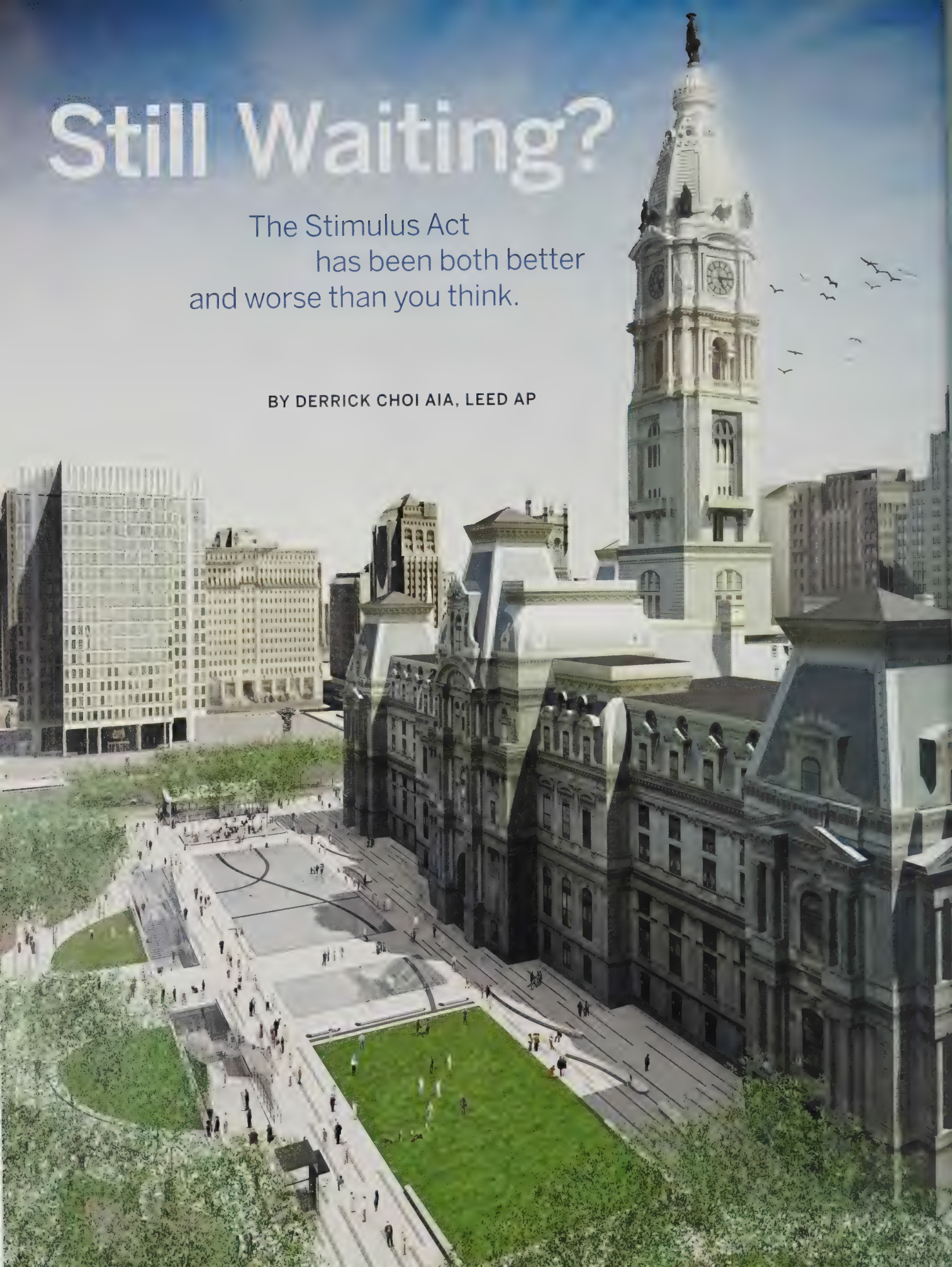




Still Waiting?

The Stimulus Act has been both better and worse than you think.

BY DERRICK CHOI AIA, LEED AP



Derrick Choi AIA, LEED AP is the principal of XChange Architects in Brookline, Massachusetts, where his work focuses on infrastructure, transportation, and urban design.

OPPOSITE
The Dilworth Plaza and Concourse Improvement Project in Philadelphia is a beneficiary of stimulus funds, combining a renovated commuter rail and extensive improvements to a civic space. Designers: KieranTimberlake and Olin. Rendering courtesy Center City District.

The American Recovery and Reinvestment Act (ARRA) of 2009—better known as the Stimulus Act—represents an unprecedented response by the US government to the global economic crisis, committing nearly $800 billion in stimulus funding to counter its effects. The ARRA is an amalgam of near-term economic stimulus (job-creation programs, tax credits, and incentives for 3.5 million new jobs) and longer-term investments in public health, education, infrastructure, and clean-energy initiatives. The AIA estimates that ARRA funding includes approximately $87 billion for the built environment, including school and federal building modernizations, Department of Energy programs, public transportation, housing and urban development, and Small Business Administration assistance.

In the wake of pervasive unemployment in the building sector, many designers and construction workers wonder what happened to *their* recovery. The answer may be increasingly complex as the ARRA continues to unfold. As a political high-wire act of short-term recovery and calculated long-term payoffs, the government's message of "investing in the future" has been lost within the context of the stark realities of a tepid recovery: prolonged near-double-digit unemployment, dormant credit markets, and a stagnant gross domestic product.

Bumps Along the Road

The ARRA struggles with its public-relations paradox: On the one hand, it touts transformative public works and infrastructure initiatives (high-speed rail, clean energy) that are comparable in scope and economic impact to the 1930s Works Progress Administration, and on the other, it heralds a mishmash of "shovel-ready" projects. Small wonder, then, that the building industry is generally skeptical of the ARRA's efficacy, questioning its viability as either a comprehensive national infrastructure renewal program or a legitimate jobs-creation act.

Persistent (mis)representations of infrastructure—merely one-fifth of ARRA funding—as the linchpin of the recovery have unnecessarily elevated expectations for an economic panacea. But dismissing the ARRA as an incoherent hodgepodge of pavement projects fails to acknowledge the far-reaching scope and vision of the administration's infrastructure agenda. As the building industry grapples with the ARRA and its opportunities (or the lack thereof), some aspects of the legislation should be understood, including:

Broad scope of ARRA funding: Infrastructure aside, 80 percent of ARRA funding permeates myriad sectors of the economy. Many initiatives are taking shape in 2011 and, if approved, will leave lasting legacies. However, the programs remain slow to generate jobs. In numerous situations, local debates rage over the appropriateness of some ARRA investments—such as multimillion-dollar TSA baggage-screening devices and subsidies for emerging clean-energy technologies—versus more pragmatic ways of getting Americans working again.

Scale and complexity of projects: As the president readily admits, numerous projects were not as "shovel-ready" (already designed and permitted) as advertised. The process-intensive nature of planning, designing, and getting the projects permitted belied the hype of "shovel-readiness." According to the Federal Highway Administration, of the 13,300 committed transportation projects from March 2010, roughly half were completed as of this year. In Massachusetts, the time-intensive process of vetting public work meant that many projects were unable to align with the ARRA funding cycle. Public-works legislation in Massachusetts, such as MGL 149A for Construction Manager-at-Risk projects, mandates a review by the state inspector general for public projects in excess of $5 million. The review alone is a minimum 60-day process. Of the recent round of the Department of Transportation (DOT) "TIGER II" transportation-related development grants, there were no recipients from Massachusetts.

Decentralized administration of projects: There is often a disconnect between plans for nationwide systems that emanate from federal policy and the complicated reality of the local political process. The example *par excellence* of a failed outcome within the complex calculus of balancing a state's fiduciary duties with broader regional or national policy is New Jersey governor Chris Christie's well-publicized recent decision to terminate the trans-Hudson rail project. The project—already one year into construction with $600 million spent in design and planning over the past decade—would have provided new tracks and tunnels to double the capacity of the Manhattan–New Jersey commute at a cost of nearly $9 billion, with about half of that eligible for DOT and ARRA subsidies. The cost-sharing nature of many public projects puts the onus on municipalities to share not merely a vision but also the fiscal accountability. Alternatively, a "National Infrastructure Bank" concept has been proposed as a more objective means to evaluate and fund projects based on merit and relevance. While the ARRA may propose forward-looking programs with global visions, most of the politics in the US remain fairly local, fiscally conservative, and unable to realize large-scale, coordinated outcomes.

Barriers to entry: Firms with limited public-work experience may find ARRA opportunities elusive as they face tough competition from firms with established public-project portfolios. Some firms have neither expertise nor capacity to take on the specialty tasks or tight schedules required of some ARRA assignments. Generally, to win ARRA-funded work, firms must not only demonstrate competence but also invest in performing well in the various "designer selection"

FOR MORE INFORMATION

Track the Money
www.recovery.gov

"A Bridge to Somewhere: The Case for a National Infrastructure Policy." *ArchitectureBoston*. Winter 2009. www.architectureboston.com

American Institute of Architects: Recovery Resources
www.aia.org/advocacy/federal/AIAB080587

processes established by municipal and state agencies. In Massachusetts, designer selection boards have been established for major construction-funding agencies including Division of Capital Asset Management and Maintenance (DCAM) and the Massachusetts School Building Authority (MSBA), to name a few. At the federal level, the General Services Administration's Design Excellence Program has been lauded as a qualifications-based (rather than cost-based) designer selection process that reinforces the value of design in the public realm.

The Road Ahead

Half of Massachusetts' $7.1 billion ARRA funds has been spent, some of which has enabled a diverse range of new buildings, including community-health centers, fire stations, regional transit hubs, IRS buildings, commuter-rail stations, and building rehabilitation and weatherization projects. According to a report in the *Boston Business Journal* based on data from the Associated General Contractors, the cumulative effects of these public and transportation-focused projects yielded an increase of 1,300 construction jobs in the state in 2010. As the Obama administration redoubles its focus this year on the private sector's role in the recovery, opportunities for the building industry to rebound with ARRA opportunities are not out of reach.

The $2.1 billion Transportation Investment Generating Economic Recovery (TIGER) grant program continues to invest in a range of transit-oriented development projects, including public transit, passenger and freight rail, and port improvements. The second round, TIGER II, has already received proposals worth more than $19 billion for $600 million in funds. The Dilworth Plaza and Concourse Improvement Project at Philadelphia's City Hall, the recipient of a $15 million TIGER grant in 2010, is an excellent illustration of opportunities for the design profession in transportation projects: a dynamic, multiuse urban plaza sitting atop a renovated multimodal commuter train station.

Private-sector projects have also benefited from stimulus funding. Although the state government is the largest ARRA beneficiary in Massachusetts, institutional and private-sector entities here have been particularly successful in leveraging stimulus funds: UMass, Harvard University, and the Broad Institute are among the top five ARRA recipients in the state, with nearly $700 million in funding. On the local level, state government also serves a critical role in the private-sector rebound. In Massachusetts, several major building projects—most



notably, the once-moribund Fenway Center "Parcel 7" mixed-use development—broke ground in 2010 thanks in part to contributions from the Commonwealth's MassWorks construction and infrastructure renewal program, a Massachusetts funding source that is independent of the ARRA. MassWorks' financial commitment to the $13.5 Yawkey Commuter Rail Station—one of the country's first net-zero-energy rail stations—is the cornerstone of the $450 million project.

On the legislative front, the AIA's Rebuild and Renew program continues to work with Congress to reinvigorate the private-sector construction market by loosening the credit market and easing regulatory burdens on small businesses. In early February of this year, the administration announced the five-point Better Buildings Initiative featuring AIA-recommended subsidies and credits for private-sector and institutional retrofits, and a national Race to Green grant competition for states to propose innovative retrofit and energy-conservation programs similar to last year's Race to the Top for education funding.

Perhaps the healthiest and most productive response to the ARRA would be an expanded understanding of what constitutes opportunity for the design and construction industry. Blair Kamin, the *Chicago Tribune*'s architecture critic, recently wrote about the design and construction industry's opportunity to transcend its complaints about stimulus projects and to make meaningful contributions in a transformative opportunity to green, rebuild, and renew American buildings. Noting that building-system retrofits may not always inspire, he asked, "But what if the fan-coil heating and cooling unit happens to be in the Ludwig Mies van der Rohe–designed Chicago Federal Center, which is getting $155 million in stimulus money for energy retrofits and other upgrades? That wouldn't be a bore." ■



ABOVE
The $12.8 million Franklin Regional Transit Center in Greenfield, Massachusetts, a recipient of ARRA funding, is among the first net-zero-energy transportation facilities in the country. Architect: Charles Rose Architects. Courtesy rendering.



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Google "upside down maps," and you will discover an entire industry based on the thrill of messing with our perceptions. Change the premises on which a map is based, and your understanding of the world changes, too. Put South at the top, Asia at the center—well, you can see why management consultants love these things.

The famous "blue marble" photo of Earth from space, free of any geopolitical boundaries, is credited with promoting the environmental movement. More recently, and far more subtly, Google Maps is continuing to change our perceptions. Zoomed in past state borders, the maps dispense with municipal boundaries; the lines that are important are roadways.

Whatever that might say about our cultural values or Google's canny understanding of consumer needs, it does suggest a tantalizing prospect: What if those boundaries were actually erased? How would we redraw them? And how could new municipal boundaries better align government with our needs today?

Many of Massachusetts' town lines were based on geographic features; forgotten disputes among parishes; long-dead landowners' property lines; and, yes, craven political gamesmanship—this is, after all, the state that invented the gerrymander. Now, as the Commonwealth contends with the politics of congressional redistricting, we realize how arbitrary many of these designations are.

Which is not to say that they don't have meaning. Towns have developed their own histories, their own personalities, their own customs. Through the accretion of planning and zoning decisions they often develop distinct physical character. Moving across a town line can represent real differences in daily life: access to afterschool activities; the need to buy a filter for your drinking water; weekly trash regulations; the affordability of property taxes in retirement.

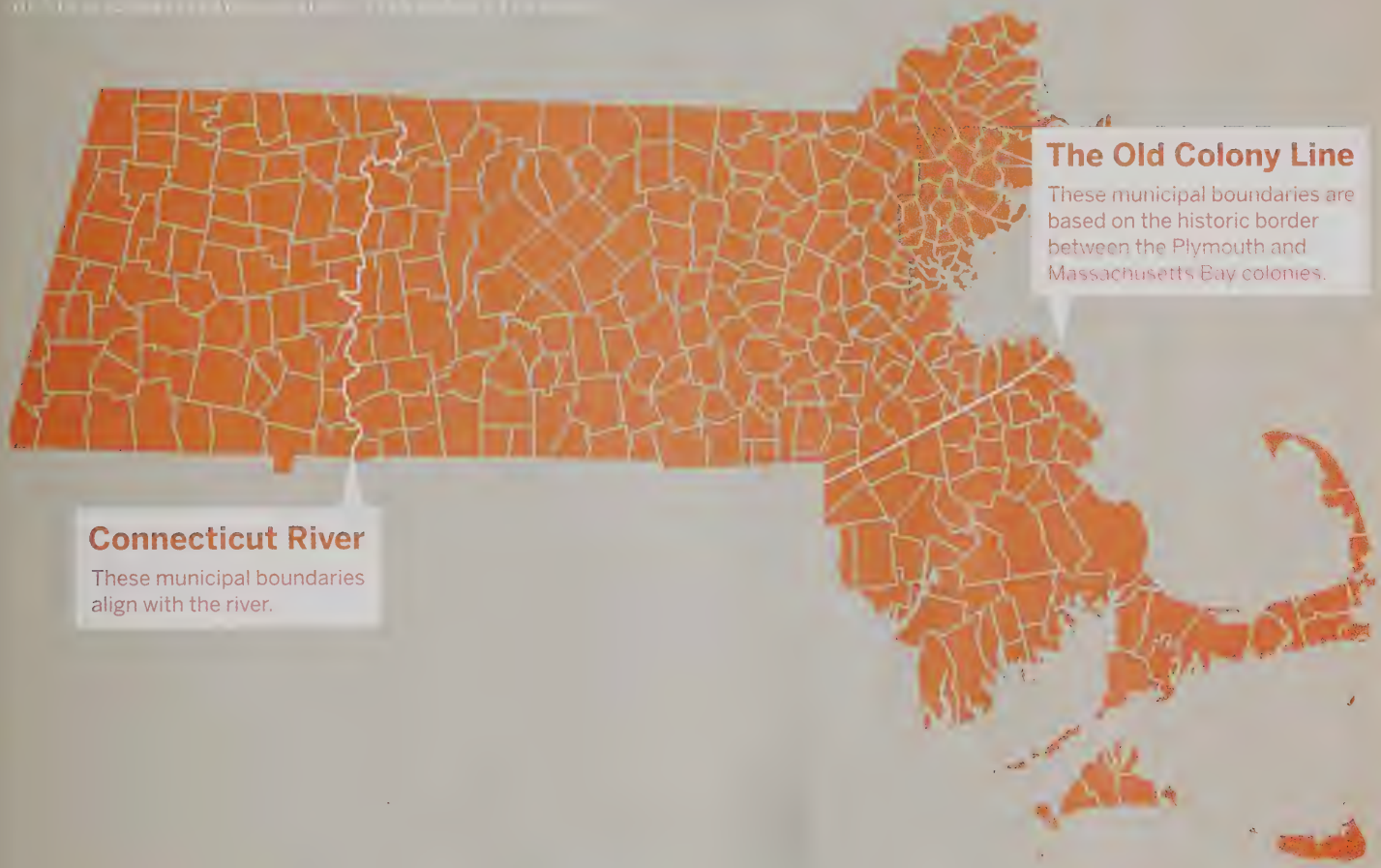
Just as important as town identities are the regional affinities that have been established through school sports rivalries, local daily newspapers, regional hospitals, even proximity to grocery stores or shopping malls—the de facto communities that have evolved over the last century. Perhaps similar bonds of community will develop over the coming century with increasing awareness of environmental affinities such as watersheds and wetlands.

However arbitrary they may be, municipal boundaries are unlikely to change. But pondering an alternative map does have value: the very act of weighing the criteria for change—geographical, political, cultural, economic, social, environmental—can change our perception of what government should be.

—Elizabeth S. Padjen FAIA

Municipalities

MASSACHUSETTS' BASIC UNIT OF GOVERNMENT IS THE MUNICIPALITY. MUNICIPAL BOUNDARIES WERE DETERMINED BY HISTORIC SETTLEMENT PATTERNS, TRANSPORTATION ROUTES, AND NATURAL FEATURES.



The Old Colony Line

These municipal boundaries are based on the historic border between the Plymouth and Massachusetts Bay colonies.

Connecticut River

These municipal boundaries align with the river.



Counties

county government abolished



Regional Planning Agencies



Division of Fisheries and Wildlife Districts



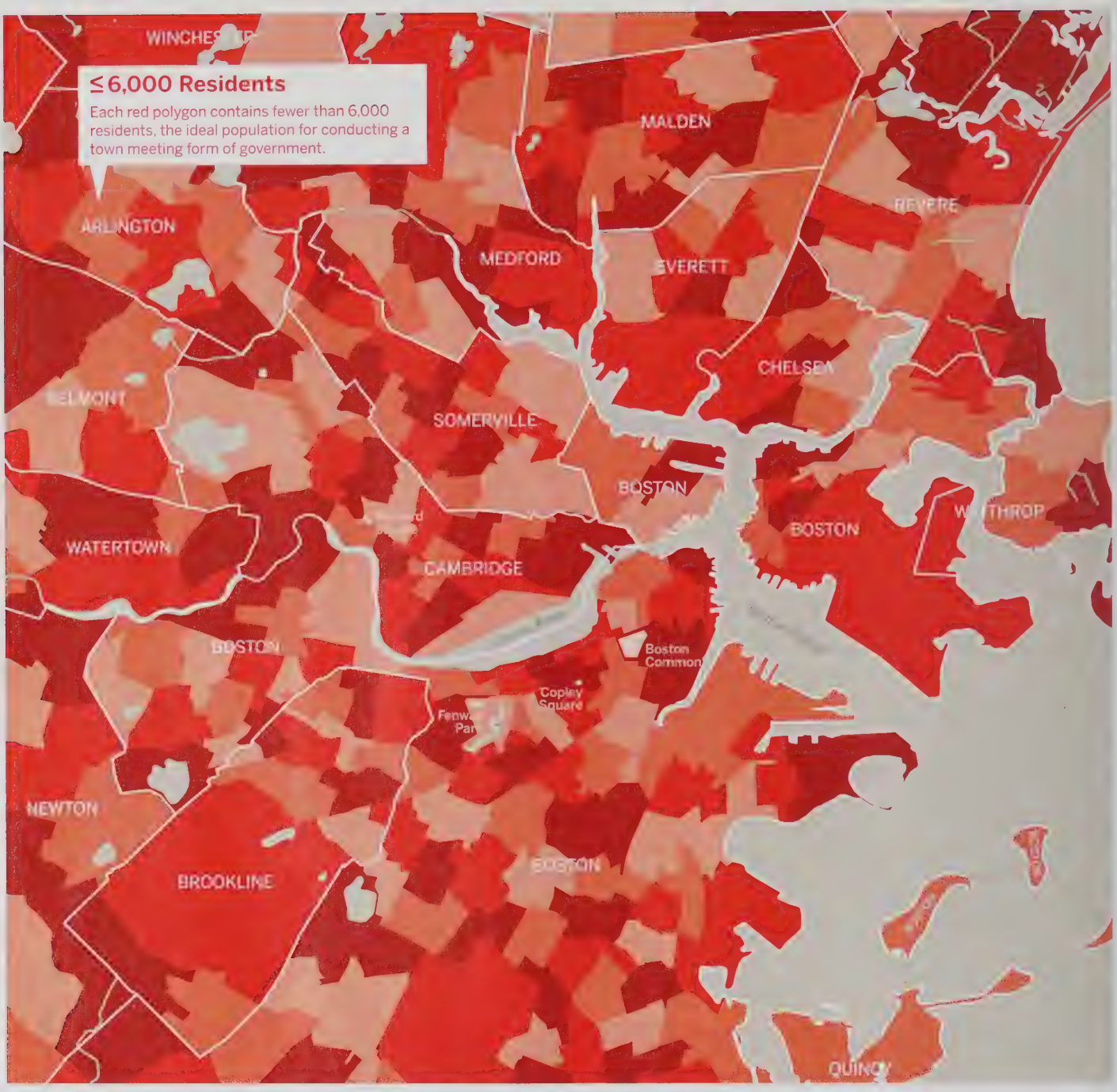
Homeland Security Planning Regions



Executive Office of Health & Human Services Regions



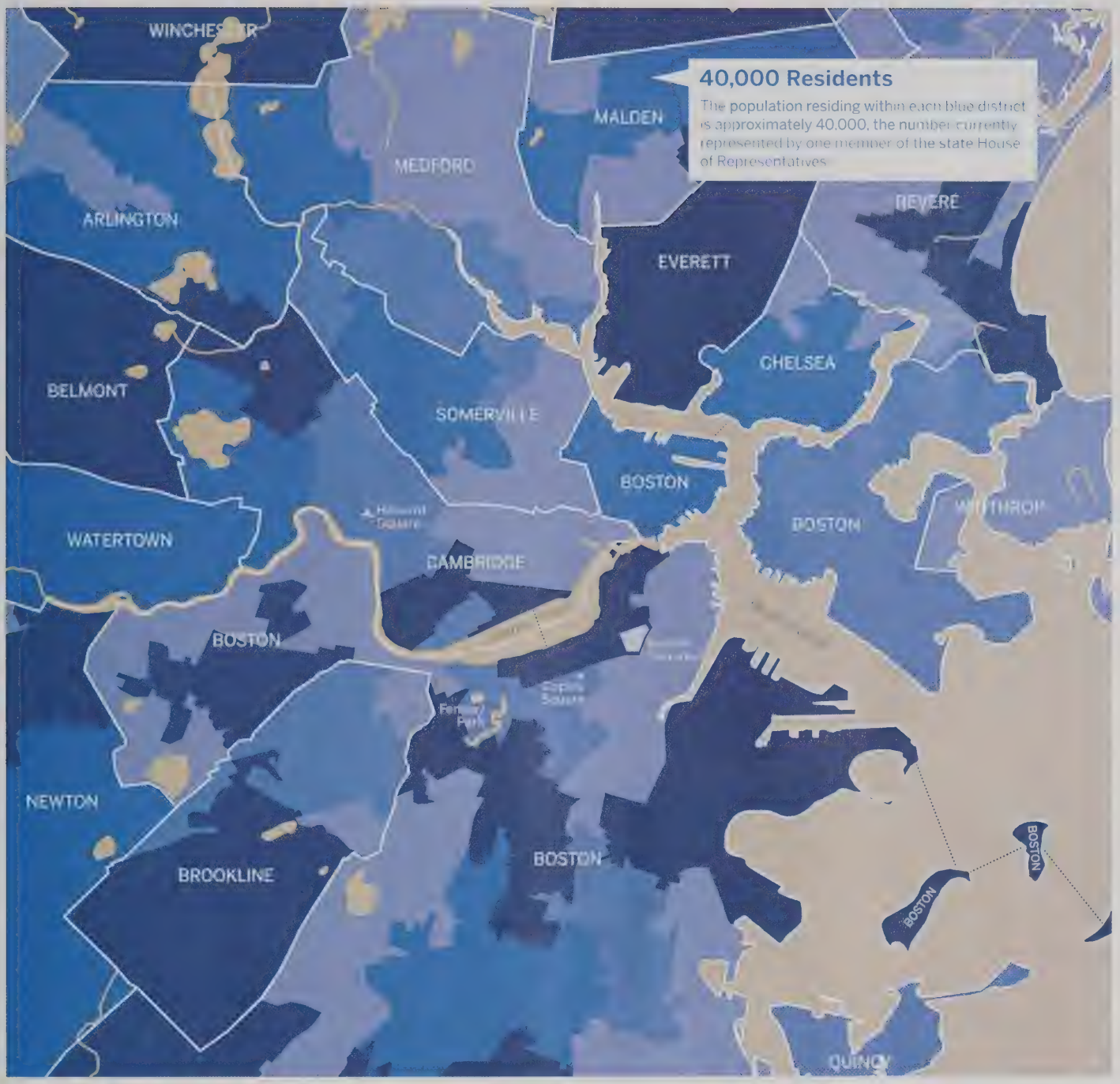
MassHighway Districts



Town**Meeting**ships

MUNICIPALITIES REORGANIZED TO ENABLE TRADITIONAL TOWN HALL MEETING GOVERNANCE

SOURCE: Based on Census 2000 data; census block groups aggregated into regions with fewer than 6,000 residents. Municipal boundaries could be redrawn with each census. MassGIS.



Housetowns

MUNICIPALITIES REORGANIZED BY ELECTORAL DISTRICTS
IN THE MASSACHUSETTS HOUSE OF REPRESENTATIVES

SOURCE: Massachusetts House legislative districts. MassGIS.



Ecotowns

MUNICIPALITIES ORGANIZED INTO AREAS WITH SIMILAR GEOLOGY, PHYSIOGRAPHY, VEGETATION, CLIMATE, SOILS, LAND USE, WILDLIFE, AND HYDROLOGY

Town**Sheds**

MUNICIPALITIES REORGANIZED BASED ON WATERSHEDS

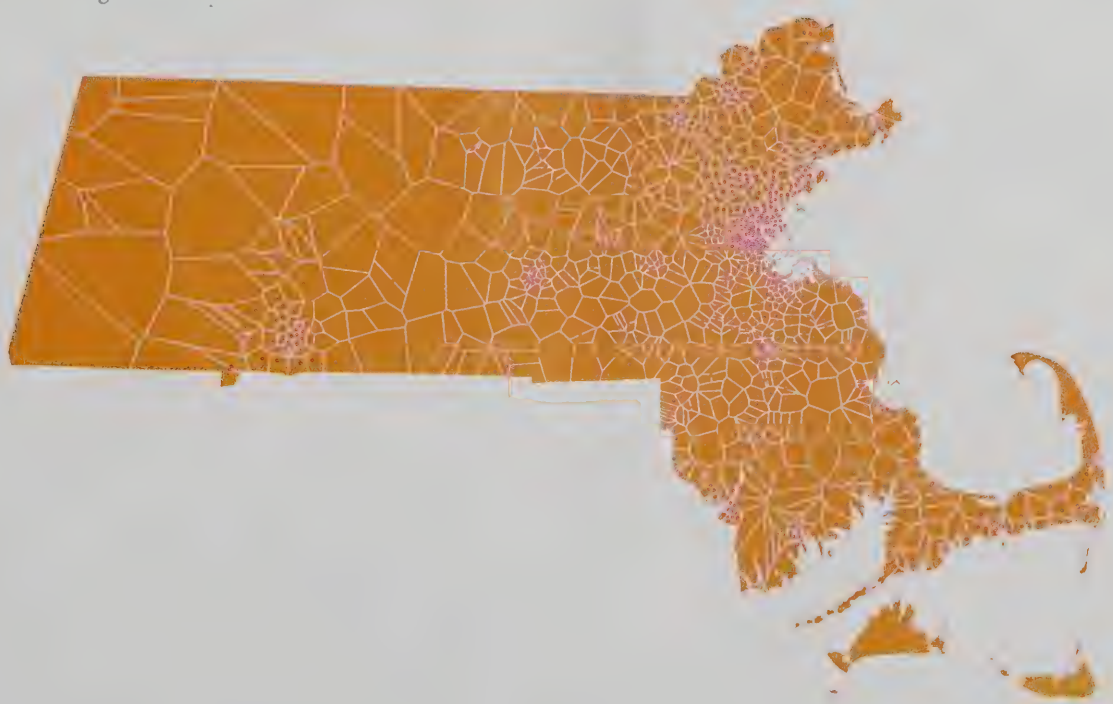
SOURCE: US Geological Survey Water Resources Division and the Massachusetts Water Resources Commission. MassGIS.



Donutowns

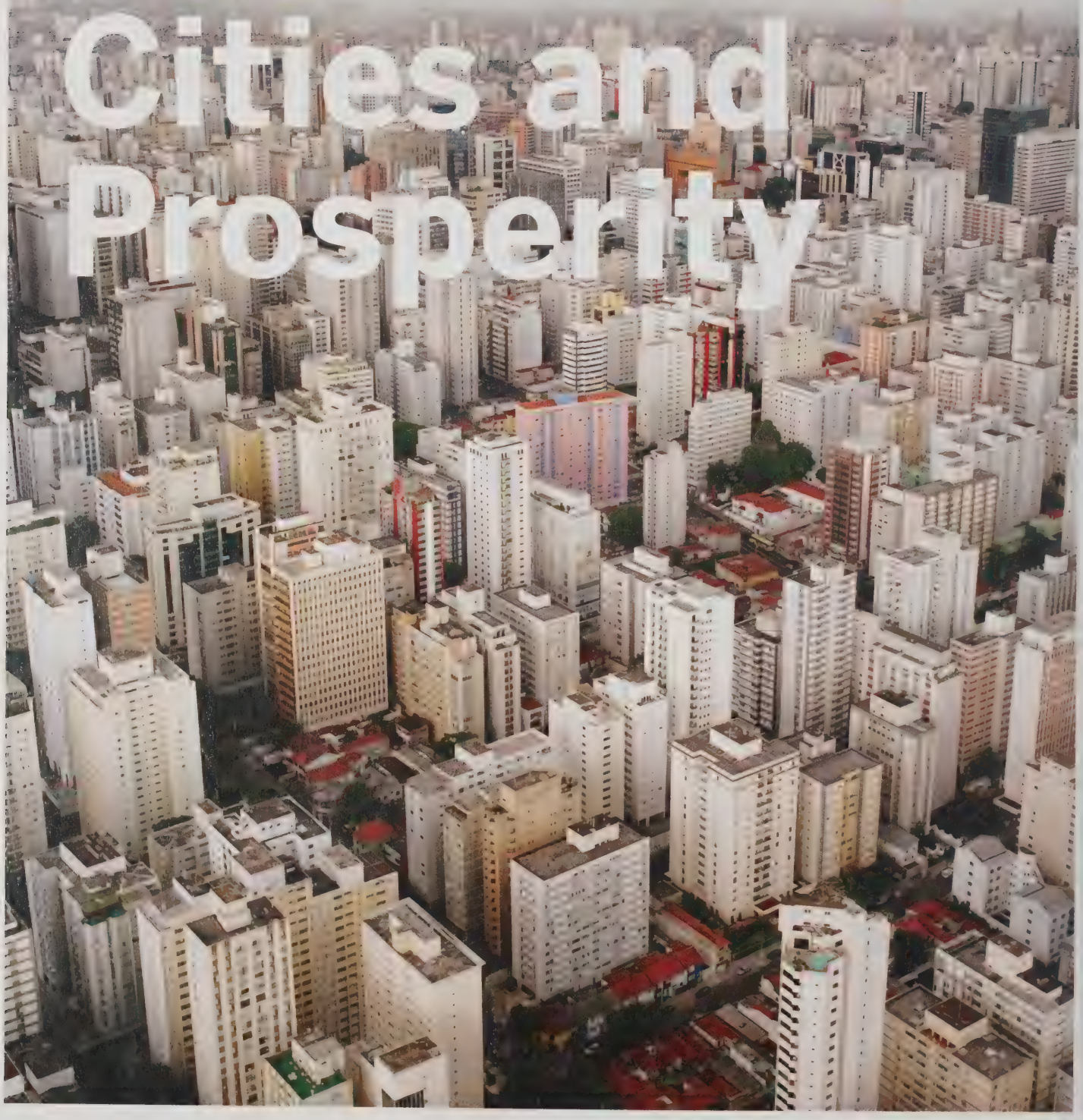
MUNICIPALITIES REORGANIZED BASED ON NEAREST DUNKIN' DONUTS STORE

SOURCE: Dunkin' Donuts locations from POI Factory; boundaries established by generating the Voronoi diagram based on store locations. MassGIS.



Lands of Opportunity:

Cities and Prosperity



How do you keep them down on the farm after they've seen Shanghai? Maybe you don't want to.

Edward L. Glaeser PHD talks with Brent Ryan PHD

Brent Ryan: You're an economist interested in themes like the relationships between government regulations and land markets, and between innovation and urban prosperity. In recent years, you've also become well known for your work on affordable housing. What are some of the connections among your interests?

Edward Glaeser: Most of my early work was about the effects of geographic concentration of industries in cities—for example, the reasons why wages are higher in cities. Until a decade ago, my work was remarkably free of any focus on the importance of physical structures in the growth of cities. But then I became more involved in land-use issues and came to the view that housing is an important determinant in how cities grow and change. I tried to understand why some places, like Boston and San Francisco, have very high wages but very little housing and population growth, and some areas, like Las Vegas and Houston, have relatively low incomes but relatively high population and housing growth. Those two models are incomprehensible without looking at the physical world and acknowledging that it's much easier to build in Houston than it is in Boston. So I started out with a focus on the classic economic issues of cities but came to the belated recognition that you can't understand cities without understanding their physical aspects as well.

Brent Ryan: You've just published *Triumph of the City*, which has the wonderfully wide-ranging subtitle "*How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier and Happier*." By writing a book about the city as a whole, would you say you're returning to your early interests? Or exploring the latest of your interests?

Edward Glaeser: I would say it's trying to synthesize 20 years of work on cities. The book lies on the bed of economic research and statistics, but it's filled with both history and ground-level observation. Nobody understands cities without actually walking the streets.

Brent Ryan: Two major themes of the book seem to be the idea of megacities—the world urbanizing rapidly—and the idea of prosperity, the notion that cities generate prosperity and innovation. How do cities create prosperity?

Edward Glaeser: You might think that globalization and technology would have made cities largely obsolete, that we would all telecommute from what Alvin Toffler called "electronic cottages" off in the middle of nowhere. But of course the opposite has happened: in fact, cities are healthier, more important, and more economically vibrant than ever. The reason, which is also why I think cities are places of prosperity, is that the most important function of cities is spreading knowledge and promoting innovation. Cities make us smarter.

One of my favorite examples is the creation of Renaissance painting in Florence, which starts with Brunelleschi figuring out some of the rules of linear perspective, which he then passes along to Donatello, who puts it in a low-relief sculpture on the wall of Orsanmichele and passes it along to their friend Masaccio, who puts it on the wall of the Brancacci Chapel and passes it along to his student Fra Filippo Lippi, who passes it along to Botticelli, and so forth—each artist riffing on another and figuring out new ways to use this gift to create wonders that the world still treasures. I interpret the murky origins of the skyscraper in Chicago—the debate about the importance of the Home Insurance Building, and the relative prominence of Burnham and then Sullivan's aesthetic innovations—as being a similar chain of smart people connecting with one another. There's no great invention that isn't in some sense collaborative. And cities, by pulling together really brilliant people, as Chicago did in the world of architecture in the years after the fire, are able to create these wonderful things that make all of our lives better.

Brent Ryan: Of course, cities also present some extreme challenges, and you've written quite a bit about urban problems and solutions. The US has a number of

Edward L. Glaeser PHD is the Fred and Eleanor Glimp Professor of Economics in the Faculty of Arts and Sciences at Harvard University. The director of the Taubman Center for State and Local Government and the director of the Rappaport Institute of Greater Boston at the Kennedy School of Government, he writes regularly for *The Boston Globe*. He is the author of *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier and Happier* (Penguin Press, 2011).

Brent Ryan PHD is an assistant professor of urban design and public policy in the department of urban studies and planning at MIT. An architect and urban designer, he has also practiced planning and urban design in Chicago, Boston, and New York City. His current research focuses on shrinking cities, the subject of a forthcoming book.

OPPOSITE
São Paulo, Brazil, one of the world's megacities, with a metropolitan population of 20 million. Photo: Scott Peterman

successful cities, and Boston is certainly one of them. But 50 years ago, Boston's future wasn't so bright. I have a book from 1981 that identified Cambridge as the second most steeply declining city in the US. What happened to turn Boston around?

Edward Glaeser: One of my predecessors vehemently insisted that, unless the federal government bailed out the candy industry, Cambridge would never come back. The Boston story is remarkable in its comeback sense, but not remarkable in its broad arc. At the beginning of the 20th century, Boston was an industrial town built around its transportation connections. But with declining transportation costs, industry was able to move to cheaper places. And then the center city was hit by the onslaught of the automobile, which encouraged people to move out.

Think about the 19th or late-18th century: the things that made cities successful were small firms, smart people, and connections with the outside world. Proximity mattered. Those are still the things that are most important to urban success today.
—*Edward L. Glaeser*

But Boston came back. I think it's because there was a countertrend: these same changes in technology increased the value of being smart. The first wave was driven by people associated with MIT—people like Arthur D. Little, who gave us one of the first consulting firms; Vannevar Bush of Raytheon; and An Wang, a computing pioneer. The concurrent development of Route 128 as the place for new technology companies supported the growth.

That was followed by the relative stagnation of Route 128, which AnnaLee Saxenian so eloquently dissects in her book comparing Route 128 and Silicon Valley. She argues, and this is something that Boston stills struggles with, that the large-firm corporate mentality of Route 128 stifled growth. And she is empirically right. Places with lots of small firms tend to do much better than places with big firms. Today, Boston's Suffolk County has one of the largest average firm sizes of any significant county in the country, which is not a good sign. Luckily, our education seems to make up for that difficulty, and we have also benefited from the connections among very smart entrepreneurs. So Route 128 faltered, but financial services and management consulting have grown, and we have benefited from other innovations, such as biotech.

Brent Ryan: You also write about cities that are not growing but are, in fact, shrinking. So urban growth isn't inevitable, and you even argue that innovation can be self-destructive.

Edward Glaeser: Sure, it can. Henry Ford's innovation is an example of that. Detroit in 1900 felt a lot like Silicon Valley in the 1970s. There was a genius on every street corner. And they did this amazing thing: they figured out how to create the mass-produced, cheap automobile.

For the city of Detroit, it proved to be a very mixed blessing, because Ford's solution was to create vast, vertically integrated factories that were in effect walled off from the outside world. Think about the 19th or late-18th century: the things that made cities successful were small firms, smart people, and connections with the outside world. Proximity mattered. Those are still the things that are most important to urban success today. Yet that's the opposite of, say, Ford's River Rouge plant, which is walled off from the outside world. Once you create a walled-off, vertically integrated firm, you don't need to be in a city. So when transportation costs declined, which meant access to the Great Lakes wasn't important, plants could move to cheaper regions—right-to-work states, or even China.

The problem was that Ford created a city that lost the ability to reinvent itself. In Boston, a chain of smart innovators continues to come up with new ideas and build on each other. Even today, only 12 percent of Detroit's adult population has a college degree, as opposed to the 27.5 percent national average. That's a real impediment.

Urban decline happens. Part of the real tragedy of Detroit has been the mistakes made in trying to fix it, especially the strategy of building structures instead of investing in people. That's always a mistake. I hate to tell this to an architecture magazine, but I believe very strongly that the real city is the people.

Brent Ryan: Buildings don't matter?

Edward Glaeser: The buildings of course matter. But the real heart of the city is always the people. Buildings are ultimately about making accommodations and bringing joy to people. But the hallmark of declining areas is having a lot of infrastructure relative to people. In a place that's declining, it's almost impossible to imagine that it makes sense to add more infrastructure. Yet the federal government was there, ready to subsidize urban renewal and transportation and to build new structures. So Detroit now has a people mover that glides over essentially empty streets, which is about as nonsensical an idea as you can possibly have. And that makes me angry, because they should have been investing in the children growing up in the city, to help them find success.

Brent Ryan: It's impossible to talk about cities in this country without also talking about suburbia and sprawl. You've written about energy-wasting suburbanites, contrasting them with energy-saving Manhattanites.

Edward Glaeser: I want to make it clear that I've been one of those energy-wasting suburbanites for about five years, so I know whereof I speak.

Brent Ryan: And as you've noted, it's a popular choice, one that often reflects a certain economic efficiency.

Edward Glaeser: People make these choices for very understandable reasons. If you want cities to compete and succeed, you need to understand what the suburbs are delivering and figure out why cities can't deliver something comparable.

Why would middle-income Americans choose Houston over New York City? Just run through the numbers. I assume they're earning slightly more money in New York. But after housing, after taxes, a slightly lower initial income ends up translating to a 50 percent larger after-tax, after-housing real income in Houston. It's not unusual to find homes in Houston for $150,000 because of its unfettered housing industry. I'm not advocating a full Texas solution here. But you have to understand that the people who are choosing Texas are not crazy, and they shouldn't be treated as if they were deranged. We should figure out how to make Greater Boston more appealing to them, and one way is cheaper homes.

Brent Ryan: And cheaper housing is one of the principal advantages of sprawl.

Edward Glaeser: Yes, it's a huge advantage of sprawl. As an economist, I'm not comfortable criticizing any individual's decision about where to live, but I am very comfortable criticizing government policies that artificially push people away from cities into suburbs. And there are three sets of policies that warrant examination.

The first issue is our fetish for home ownership. Approximately 85 percent of single-family detached houses are owner-occupied; they tend to be in the suburbs. And approximately 85 percent of the units in multifamily dwellings, which are the basis of urban housing, are rented. The American Dream dictates that we're going to have a massive subsidy for home ownership—and I'm talking not just about the home mortgage interest deduction but also Fannie Mae, Freddie Mac, the whole shooting match—which essentially pushes people out of urban apartments and into suburban homes. It's hard to see why that's the job of the federal government. There's a lot of nonsense spread about how this is about creating an ownership society where everyone has more assets. But then why would we structure it as a subsidy to debt? We're giving people the incentive to take out every ounce of equity they have in a house because they are subsidized based on the amount that they owe. That badly needs to be rethought.

The second policy that's important to examine is our subsidization of transportation, especially of roads. A study by Nathaniel Baum-Snow shows that each new highway that cuts into an urban core reduces that city's population by 18 percent. But we continue to do this. In the latest stimulus bill, the infrastructure spending was twice as high per capita in low-density states as it was in high-density states. If infrastructure means more roads going into low-density areas, we shouldn't be subsidizing it.

The third issue, and this is the really intractable one, is our schools problem. For so many parents, the education gap between cities and suburbs is huge. And it's very difficult to figure out how to change that. Again, I'm going to show my economist side on this, but I believe that cities at their best succeed because they have lots of competition and innovation. One possible solution to the schools problem is to encourage more competition. If you think about what makes the restaurant scene in Boston or New York great, you'd have to point to the ability of new entrants to start and then to fail if they're lousy—that's what creates overall success. Imagine if you instead handed over all the restaurants in Boston to a single food superintendent.

Why would middle-income Americans choose Houston over New York City? Just run through the numbers. The people who are choosing Texas are not crazy.
—*Edward L. Glaeser*

Brent Ryan: So you argue that suburbia represents a rational choice for Americans faced with conditions that our policies have created. But at the global scale, where some of these policies don't apply, suburbia also seems to be the choice that people are making. There is sprawl around Brussels and sprawl around Shanghai. What do you think of other world cities, particularly megacities, following America's lead with respect to its built environment?

Edward Glaeser: Anyone who worries about carbon emissions needs to worry deeply about the future of urban reform in the developing world. Quite honestly, because Europe has a relatively stagnant or declining population, Brussels amounts to a rounding error in

terms of the global emissions of the world. But China, India—that's something else. Right now, China has very little air conditioning and only moderate car usage; that's going to change as the country gets rich. Many of the great environmental battles of the 21st century will be about urban form in the growing cities of Asia. The really big payoff will come from creating a denser, more sustainable world in India and China relative to the US. That doesn't get us off the hook—we can't exert any moral persuasion unless we get our own greenhouse in order.

Cities need government much more than low-density areas do.
—Edward L. Glaeser

Brent Ryan: What is leading to this explosion of urbanity across the world?

Edward Glaeser: Cities have always been part of the process of development. We are witnessing a world in which poor countries are becoming rich countries, and cities are helping to make that happen. One of the critical roles that cities play in the development process is that they're conduits across countries and continents. They enable people from India, for example, to connect with people from Europe and the US. Gandhi may have thought that the future of India was in its villages, but there is no future in rural poverty; the future of India is in its cities because they enable it to be part of the world economy and to export its remarkable human skills. And obviously China is doing the same thing.

Of course, these growing megacities face enormous challenges; I'm not trying in any sense to sugarcoat it. If I'm close enough to exchange an idea with you face to face, I'm also close enough to give you a contagious disease. And if I'm close enough to sell you a newspaper, I'm close enough to rob you. Cities need government much more than low-density areas do. They require infrastructure: paved roads; sewers; and, most of all, clean water. That's an enormous challenge, particularly for weaker governments to meet. We shouldn't forget that at the beginning of the 20th century, American cities were spending as much on water infrastructure as the federal government was spending on everything except for the Army and the Post Office. It was an extraordinary investment.

Brent Ryan: Some architects and planners are beginning



to focus on the ways that design can serve these cities more productively. The slums or favelas that ring these cities, for example, are getting more attention. What are some ways that you think design might be deployed more effectively in those areas?

Edward Glaeser: One of the greatest needs in these very rapidly growing cities is also one of the most counter-intuitive: producing nondurable housing. New housing needs to be affordable and environmentally sensitive but built for the short term. If incomes are growing quickly, then that country is going to look very different in 30 years, and it's almost unimaginable to believe that the housing built today will be appropriate in 30 years. That said, these cities already have richer people and need higher-end housing as well as commercial space. And it's absolutely crucial that the collective architectural genius thinks about how to make these cities more beautiful, more sustainable, more interactive.

Brent Ryan: You've argued that the urban growth that's occurring is something that we shouldn't resist but accept. Should we be attempting to shape the growth of these cities in any way, or should we let the market do that?

Edward Glaeser: We do absolutely need to think about shaping them. I just wish that shaping them, in many cases such as India, didn't mean floor-area ratios of 1.33—which severely limit average heights and guarantee that office space is extremely expensive and that the city sprawls out. That's not the kind of shaping that they need. There's great opportunity for urban planners to be heroes in the growing cities in the world where their services are so badly needed. But they have to recognize these places are going to continue changing.

Brent Ryan: Their designers and planners need to be as agile as entrepreneurs, paying attention to events as they change, and responding quickly and innovatively as they happen.

Edward Glaeser: That's a great way of putting it. I guess we should now be advising "Go east, young man." This is a time in which, if I were in your industry, I would want to be in China and India. Extraordinary things will happen there, things that will require a lot of innovation and a lot of thought. ■

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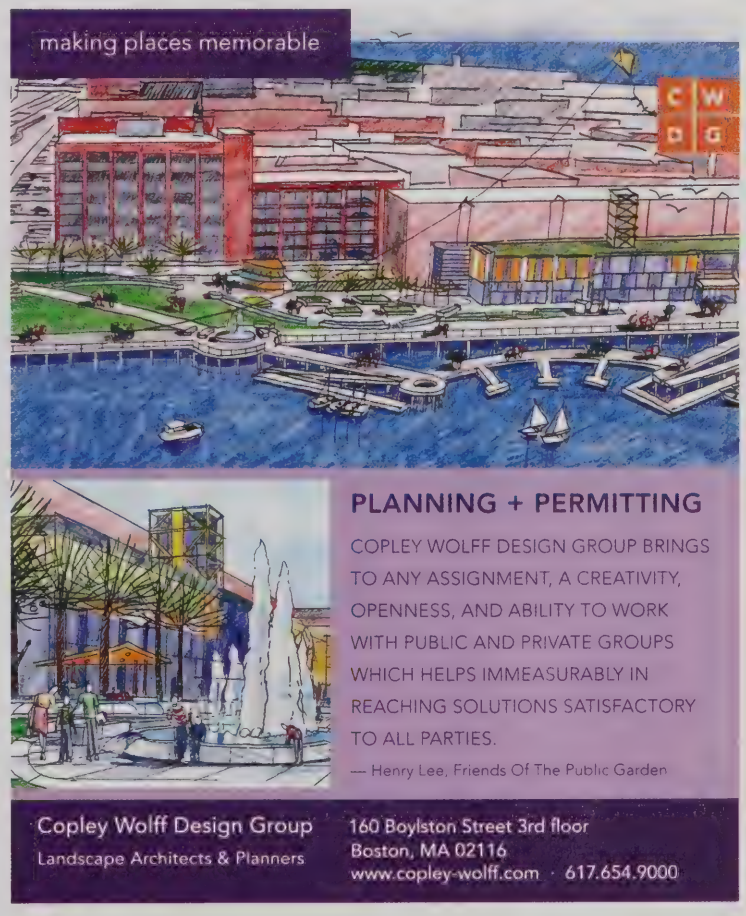
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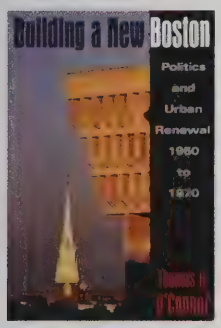
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Books



Matthew J. Kiefer is a land-use attorney at Goulston & Storrs in Boston. He teaches in the urban planning program at the Harvard Graduate School of Design.

Building a New Boston: Politics and Urban Renewal, 1950 to 1970
by Thomas H. O'Connor
Northeastern University Press, 1993

How Boston has changed in the last 20 years! A cleaned-up harbor, a buried highway, loads of downtown housing, and myriad incremental improvements everywhere. But it's nothing compared with how much Boston changed from the end of Mayor James Michael Curley's reign in 1949 to the completion of the new City Hall in 1969: Think of the Central Artery and the Turnpike, the Prudential Center and Hynes Auditorium, Government Center and the West End, the first downtown skyscrapers since the Custom House Tower, and enormous public housing projects in virtually every neighborhood.

What accounts for the difference? In two words: urban renewal, a federal program practiced in Boston with unmatched vigor and ambition. Boston College historian Thomas O'Connor treats this as essentially a political story, telling planning stories along the way. Despite the book's subtitle, he begins with the Curley era in the 1930s and ends with the rebirth of the waterfront and Faneuil Hall Marketplace in the late 1970s.

Though associated with Mayor John Collins, the "New Boston" really began with his predecessor John Hynes, who vanquished the parochial Curley machine. Hynes tapped federal funds, the idealism of returning veterans, and popular faith in government, uniting the business community, the cardinal, and the newspapers (all of which really mattered) behind reshaping downtown Boston. Collins, with the benefit of a newly created Boston Redevelopment Authority (BRA) and increased federal largesse, embarked on a citywide makeover and presided over the implementation of what Hynes had started.

The promise of economic redemption for a once-proud city overcame the old Irish/Yankee divide. But over time, a backlash against forced relocation, sweetheart real estate deals, and social engineering engendered a downtown-vs.-the-neighborhood divide that acquired a racial dimension during the explosive 1960s.

Under Ed Logue, the BRA learned from its mistakes, adopting historic preservation, citizen participation, and pedestrian orientation—ideas that dissenters such as Lewis Mumford, Jane Jacobs, and Walter Muir Whitehill championed during the Modernist ascendancy of Victor Gruen and I.M. Pei. Vindicated by the improbable success of Faneuil Hall Marketplace, this change in approach came relatively quickly—it was, after all, only a dozen years from the annihilation of the West End until the Rouse Company was tapped to rehabilitate the moldering Quincy Market in 1973.

The book—and the era it recounts—provokes an uncomfortable mixture of revulsion and nostalgia. Though now embedded in local mythology, the naive planning ideas and ruthless methods of the early days are still shocking to read about. But the notions that central cities warrant federal government support and that planning can be a transformative endeavor are beguiling during an era of limited government, strained municipal resources, endless negotiation of development exactions, and cautious intervention in adapting the city for the changes ahead.



Ian Baldwin is an architect and writer in Providence.

Too Big to Fall: America's Failing Infrastructure and the Way Forward
by Barry B. LePatner
Foster Publishing, 2010

Beginning with the 2007 collapse of the I-35W bridge in Minneapolis, *Too Big to Fall* shows us the equally shocking failure of the Minnesota Department of Transportation (MN/DOT) to avoid it. Scarily, Barry LePatner finds, this cynical neglect of bridges is entrenched nationwide.

This persuasive indictment comes, not surprisingly, from a lawyer. LePatner's autopsy of the hem-and-haw correspondence between MN/DOT and its sundry consultants leading up to the disaster is a gripping—and infuriating—read. He also debunks the report by the National Transportation Safety Board (NTSB) blaming a 40-year-old design flaw in the gusset plates and reveals that MN/DOT itself may have hastened the collapse by progressively increasing live and dead loads on a structurally deficient bridge designed for 60,000 cars a day but carrying 160,000.

There is plenty of unease to go around. The Longfellow Bridge connecting Boston and Cambridge stands out as an example of the cost of neglecting regular upkeep. Its renovation is estimated to cost $267 million, or three times one estimate for simple maintenance over the years. And I won't be enjoying the view from

the Mount Hope Bridge as long as 22 percent of Rhode Island's bridges are logged as structurally deficient, one of the worst rates in the country.

Some may find LePatner's explanation of how we got here simplistic (Jane Jacobs plus MBAs equals cowed engineers), but he demonstrates that public-sector engineering departments have also marginalized themselves, becoming indecisive, overly thrifty, standards-reliant, and politicized. The NTSB report that LePatner adeptly discredits was produced under a nonengineer chairman, a political appointee with a background in public relations.

LePatner holds up New York's iconic Williamsburg Bridge as a counterexample to I-35W. After inspections in the mid-'80s found a split column, a 10-foot rip in the deck grating, and 400 holes in the bridge's steel, the ugly legacy of deferred maintenance was clear. Elizabeth Dole, then secretary of transportation, initially blocked funds for repairs, preferring a replacement meeting federal standards. Fortunately, the city was able to negotiate a rehab, saving an estimated $300 million in the process.

This governmental penchant for rebuilding is at the heart of the crisis. "America is always about the next new thing," LePatner writes. Politicians know that hooking federal funds for a new bridge creates jobs and photo ops, but raising taxes for routine maintenance creates angry voters. LePatner calls for leadership, but a society grown fat on first-rate infrastructure at little cost to end users tends to create entitled citizens, not bite-the-bullet officials.

LePatner's other suggestions—an infrastructure bank, reformulated funding, better inspections, and national coordination—are laudable, but I wonder if time may trump technique. When a healthy economy returns, so will business as usual. We will round the curve, touch the accelerator, and sail out over the void once more, oblivious to what lies beneath.



Ellen Whittemore is deputy director of programming for the Division of Capital Asset Management for the Commonwealth of Massachusetts.

The New Politics of Planning: How States and Local Governments Are Coming to Common Ground on Reshaping America's Built Environment
by Arthur C. Nelson and Robert E. Lang
Urban Land Institute, 2009

In the US, land-use controls have always reflected our values in terms of how we choose to develop our metropolitan areas. As Arthur C. Nelson and Robert E. Lang report, these values have recently shifted, swinging away from a market-driven, piecemeal approach to planning that is lacking in environmental accountability to one that measures success against environmental criteria and the impact on our quality of life.

Concerned by the nation's exponential population growth, the authors argue that "the way we grow now is broken" and that a "new dialogue" between private and public property rights is emerging to rebalance the situation. To substantiate their view, they present a brief history of land use in the US and a statistical analysis of recent state legislative action, and ground their proposition in six case studies of states that show the effect of this legislative change.

Overall, their analysis finds that this "new dialogue" is taking place on several fronts. First, legislation has become more favorable toward environment planning and increasingly committed to planning in general. Second, voters are willing to raise taxes for Smart Growth initiatives. Third, private, nonprofit land trusts and public land acquisitions have been gaining in popularity as alternative ways to control development. Fourth, private governance, in the form of homeowner's associations (HOAs) and the like, has been expanding along with special taxing districts, such as business improvement districts (BIDs). Fifth, and finally, legislative protection for private property rights and compensation for lost value due to new Smart Growth initiatives have increased, a rebalancing of protections in the wake of the *Kelo v. New London* eminent-domain decision.

The way we grow may indeed be broken, but what the authors characterize as alternative development strategies (HOAs and private, nonprofit land trusts) is somewhat troubling. It is true that these mechanisms can fill a void that local public governments often cannot. However, they need to be looked at in terms of their impact on the public domain or, perhaps more precisely, the diminution of the public domain. Also, the authors focus on US planning trends but, in an era where new cities are forming on a regular basis worldwide, a mention of what is happening on the international front would be well placed, especially as the book's publisher is the Urban Land Institute, a worldwide organization.

This a small book with a lot of depth. The authors have brought their experience, resources, and intellect to a complex situation in order to provide the reader with a cogent and useful definition of the problem facing planners in an era of exponential growth and an increasingly fragile environment. Let's not forget, after all, that a well-defined problem is, in large part, the beginning of a solution.

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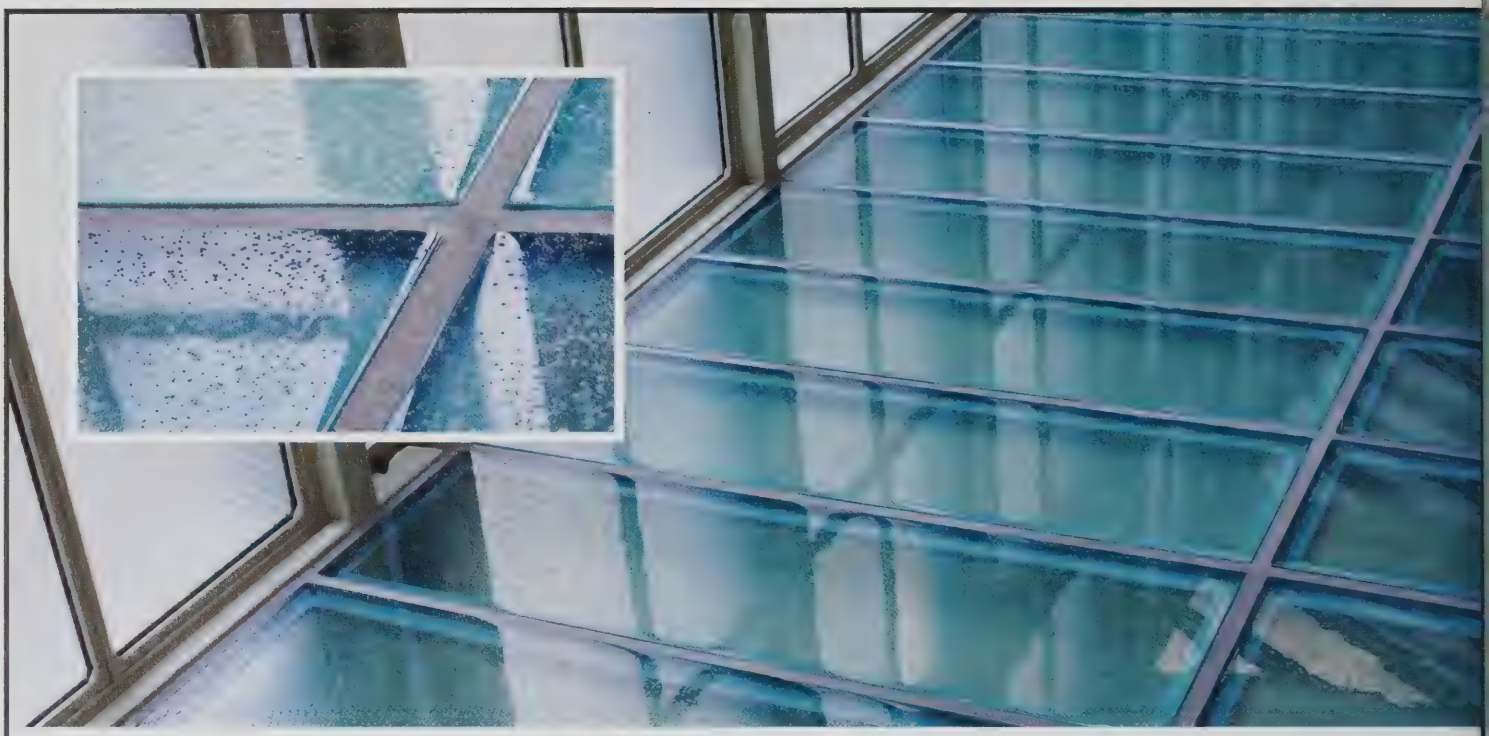
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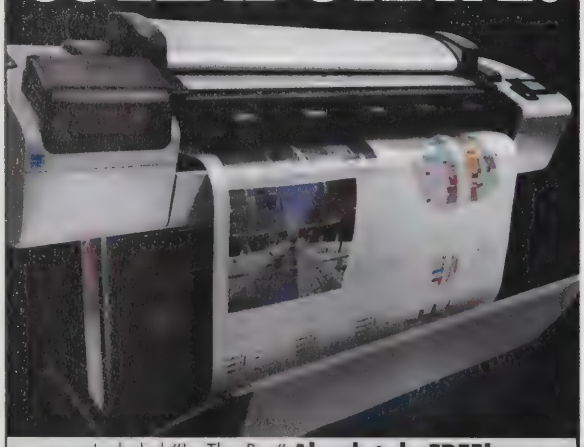
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These images show Martin Case playing blown-glass cymbals, through which patterns of light and shadow were cast onto the surrounding architecture that night.



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Old South Meeting House

Paul Wainwright is a fine-art photographer who works with a large-format camera, sheet film, and a traditional darkroom. His prints are in numerous public and private collections, including the Boston Public Library. His meetinghouse work has recently been published in his first book, *A Space for Faith: The Colonial Meetinghouses of New England* (Jetty House, 2009), www.aspaceforfaith.com.



RIGHT
Photo: Paul Wainwright

Early on a Saturday morning in January 2008, I drove my car up and up and up to the top level of a mostly empty 10-story parking garage on Washington Street in Boston, where I proceeded to unload bags of equipment. In retrospect, I'm surprised someone did not send a security officer out to see what I was doing.

What I was doing was positioning myself to make a photograph of the steeple of the Old South Meeting House, which was built in 1729. Old South was one of the final structures I needed for my photographic study of Colonial meetinghouses. Unlike most of my previous meetinghouse images, I made no attempt to eliminate elements from the 19th, 20th, or 21st centuries. I wanted an image in which the stately steeple stood as a sentinel against the passage of time. I was not disappointed.

New England's (mostly Puritan) meetinghouses were once the backbone of every colonial New England community. Built with tax money before the separation of church and state, they were municipal structures that were used both for town business and for religious worship. The government of the Massachusetts Bay Colony was a theocracy—a system of government that was one and the same with the established church—so it was only natural to construct such buildings at taxpayer expense.

I first became interested in Colonial meetinghouses when I photographed the one in Fremont, New Hampshire, in 2004. I was intrigued by the qualities of the light that filtered through centuries-old glass, the textures of the unpainted wood, and the stark simplicity of the design. I wanted to find more.

My quest meant I needed to do some reading, and as I did so, I was impressed with the historical significance of these places. For example, the American principle of participatory government—commonly referred to as the town meeting—was formed and refined within these buildings. The separation of church and state, which was included in the First Amendment to the Constitution, specifically addressed the long-standing debate over the funding of these buildings with tax money. And the *original* Tea Party was organized in a meetinghouse—Old South—which still stands on Washington Street in Boston.

The popularity of meetinghouses rapidly declined in the first decades of the 19th century. The religious beliefs and culture that led to the separation of church and state in the First Amendment also led to a desire to worship in a building that was not just a plain municipal structure. The early Puritan settlers had abandoned the rich architecture of England's cathedrals for the simple, stark meetinghouse, and after more than two centuries of change and refinement, popular tastes had swung back to a desire for a church-like structure in which to worship. Asher Benjamin, in his 1797 book, *The Country Builder's Assistant*, included a plan for a church building (Plate 27) that was based on a Christopher Wren church in London, and which closely resembles the now-ubiquitous white (usually Congregational) church on many a New England town green.

Many meetinghouses were torn down or were remodeled into buildings similar to Benjamin's design, often requiring them to be rotated 90 degrees so the gable end faced the street. With true New England frugality, when faced with the necessity to separate church and state, many towns built a second floor at the balcony level of the meetinghouse and held church services upstairs and town meetings downstairs. Until the 1990s, the town of Ringe, New Hampshire, still had this arrangement.

New England's meetinghouses embody a fascinating chapter of American history, and the surviving ones represent a unique architectural form that is distinctly New England. But most of all, they serve as reminders of a very different time, when the boundaries among government, religion, and community were nearly invisible. ■

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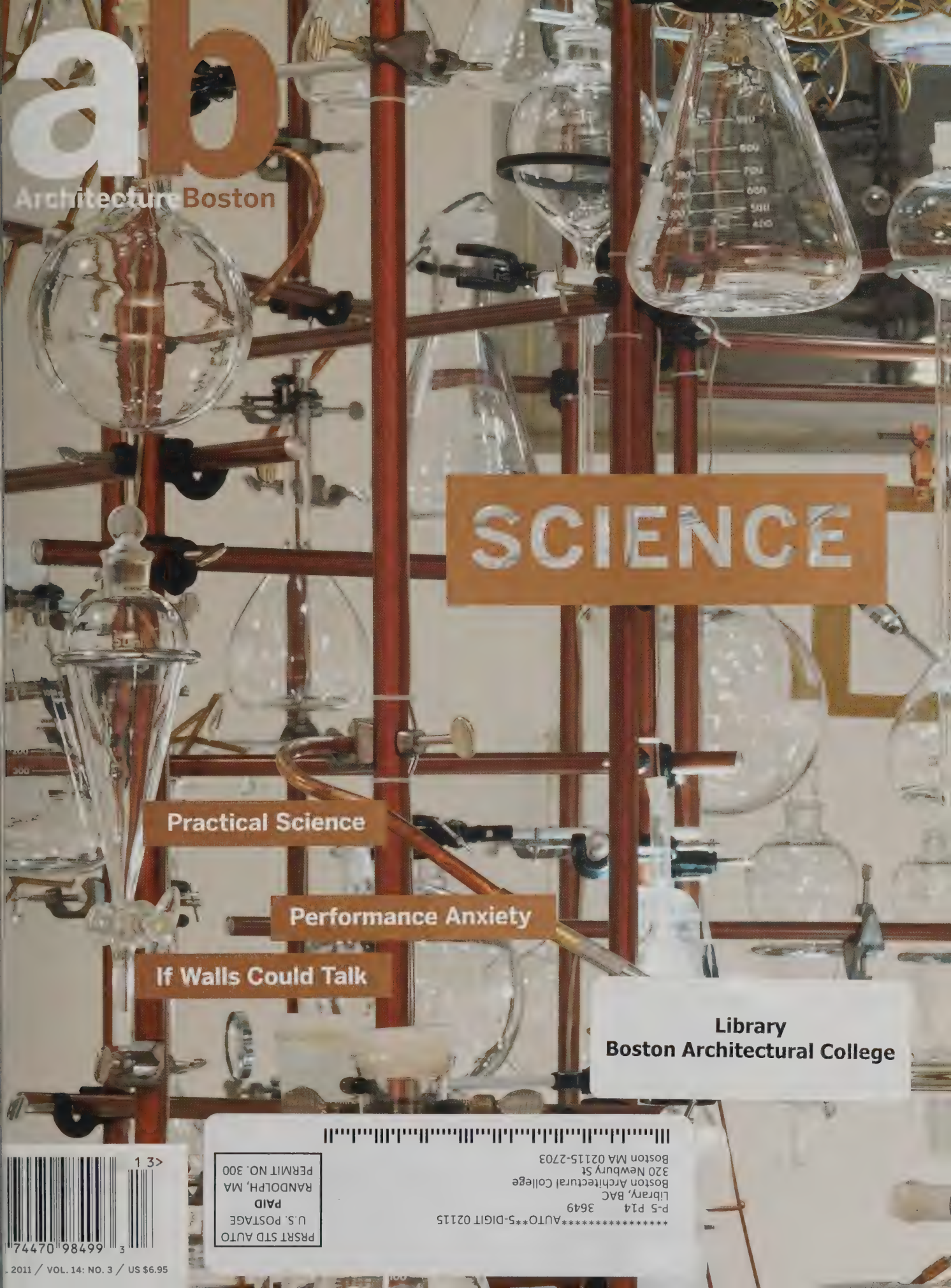
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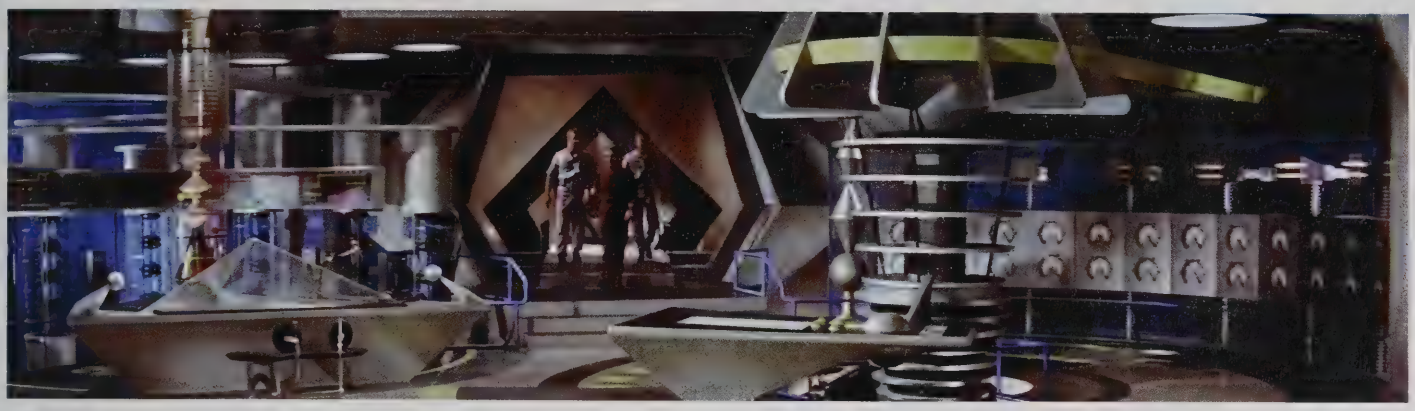


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Science

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From *Forbidden Planet*, 1956, MGM. Photo: Matt Paprocki, DoBlu.com.

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Pattern Recognition, Helmick + Schechter, 2007. Installed at the Phoenix Police Forensic Crime Laboratory in Phoenix, Arizona. Photo: Clements/Howcroft.

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Science Fiction

The '70s can be blamed for many sins, not least of which was the conviction that architecture must adopt the language of some other discipline in order to establish its legitimacy. Thus began an unfortunate compulsion to see architecture in terms of metaphors. Semiotics, linguistics, and innumerable branches of philosophy have all had their turn at puffing up the profession's claim to gravitas, while mostly baffling the few members of the public who bothered to pay attention.

The next contender is already evident: science. A few trial runs with the vocabulary of biology, ecology, and geology were the first clue; another is the generational tic among those educated in the 1990s who dub their firms "experimental" or "speculative" practices. Now it seems that no one designs anymore—projects have been recast as "research" and "investigations."

Let's stop this nonsense before it does something dangerous. The growing interest in science-as-metaphor produces not science but something science-ish—at a time when we need the real thing.

Anyone who really wants to understand the state of the profession should spend a few hours at continuing-education workshops where practitioners gather, often hungry for technical information. Small-firm practitioners—who represent the majority of the profession—may be the most ravenous: Without access to big-firm infrastructures of technical staff and consultants, they make decisions on a daily basis about rapidly changing codes, energy concerns, sustainability, and new materials—always with the threat of liability. Attendees in after-session conversations shake their heads at reports of yet another failed miracle product, share rumors about green buildings that don't measure up to their claims, and bemoan the legal cones of silence that descend over building and product failures, preventing anyone from learning from mistakes. Constrained by limited time and resources, they want answers—"just tell me what to do"—but they also want the confidence and knowledge to judge for themselves.

Architecture needs to embrace serious science. This is not a call for nerds and hipsters doing the kumbaya thing. Architects need to understand the science of building. But the profession also needs to address one of its most serious failings: its inability to develop a culture of true research and shared knowledge. And in this, architecture can learn from science.

Of course, the scientific ideal of objective rationality does not always match reality: The finest minds in science have always been subject to political and religious affronts, and the field has had its share of fraudulent and slipshod work despite mechanisms meant to ensure quality. Nor is the transmission of knowledge always seamless: As Dr. Jerry Avorn, a professor at Harvard Medical School, recently wrote in *The Boston Globe*, medicine suffers from an increasing inability to connect new information and research to the practicing doctors who need it.

But architecture is peculiarly hobbled by the fetters of tradition, legal hamstringing, and lack of funding. Someone needs to generate research, and someone needs to disseminate it.

Who is that someone? Everyone. The AIA could take a leadership role, expanding its research-grants program, revising its contract-documents series to include provisions for research, developing a research-based wiki, and sponsoring a clearinghouse that would serve as a sort of legal DMZ for discussion of construction failures; perhaps most significantly, it could sponsor follow-up performance evaluations of the buildings it has recognized with COTE/Top Ten Green Projects awards.

The growing interest in science-as-metaphor produces not science but something science-ish.

Consortia of academics and industry leaders could sponsor, vet, and publish research online; the National Academy of Environmental Design, established in 2009, is already a promising model. Architecture firms, as a few already have, could integrate research and development within their practices. Perhaps some nonprofit could follow the model of San Francisco's Public Architecture to provoke a cultural shift within the profession itself.

It's not a radical notion. Scientists and architects are equally drawn to the question posed by the astronomer Johannes Kepler four centuries ago: "Why are things as they are and not otherwise?" Challenging assumptions and imagining alternatives can lead to good research and good architecture. ■

Elizabeth S. Padjen FAIA
Editor

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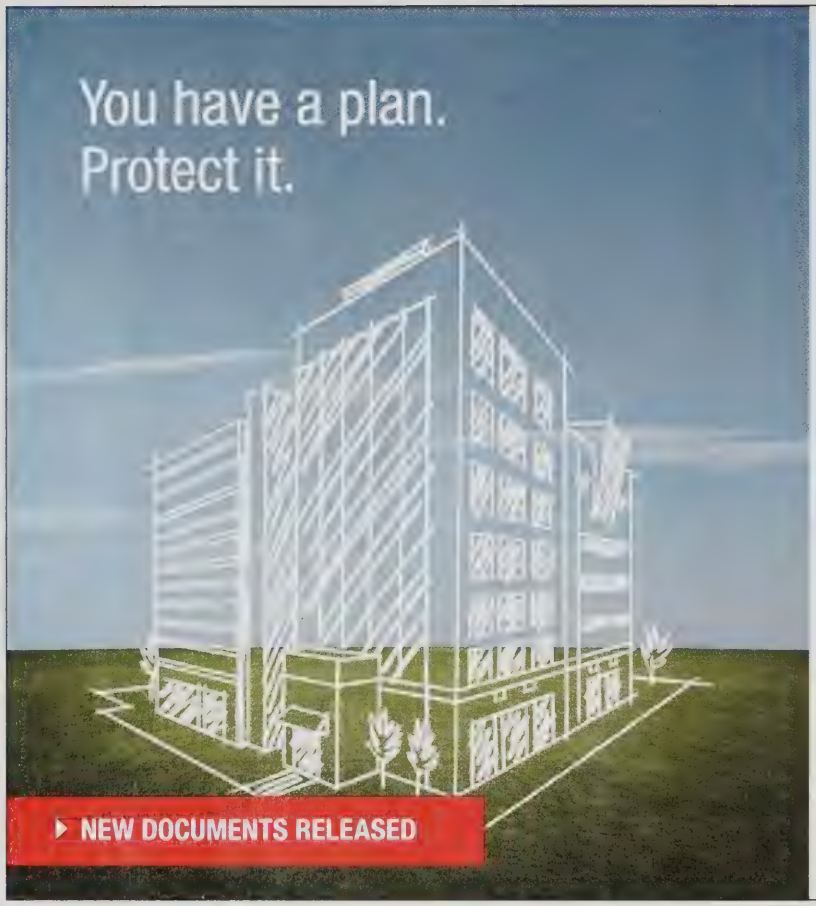
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On "Government" (Summer 2011)

Michael Liu's article, "The Shadow Government," was a welcome addition to the discussion of how best to transform the building industry toward sustainability. The ever-changing world of green building requires continued discussion, re-evaluation, and evolution, from the foundations of the LEED green building rating systems that help us engage an entire industry to the AP+ credentials of the implementers.

In fact, the stakeholders participating in the discussion are what have made LEED successful. The painstaking, volunteer-driven, consensus-based process for rating-system development depends on community involvement. The verification and certification infrastructure behind this rating system certainly has a cost to maintain; however, the US Green Building Council (USGBC) is committed to reducing the cost of certification and increasing the number of certifications through initiatives like the Volume Program and LEED Automation.

Like LEED, the Accredited Professional credential was developed as a tool for market transformation. After some experience implementing a rating system in the real world, the presence of professional silos preventing the uptake of green principles became apparent. Architects, engineers, developers, code officials, and contractors had all begun to speak the same language, but they certainly weren't fluent. Someone who could fill in the gaps and communicate across industry silos was required, hence the development of the LEED AP. Since that time, the industry has demanded greater levels of expertise in addition to familiarity with principles, and the credentialing system has grown. Like the pursuit of LEED certification itself, the use of LEED APs by project teams is completely voluntary.

As the industry evolves, the basic principles of green building design will become basic principles of all building design, requiring an evolution of not only the rating system but also the education and credentialing system. The evolution will continue until the mission is completed and every building is truly sustainable. Silly titles aside, we welcome constructive contributions to this vital discussion.

LANE BURT
Director, Technical Policy
US Green Building Council
Washington, DC

Congratulations to Michael Liu for exposing the sham called LEED ["The Shadow Government"]. If I have my facts right, it was started by a marketing director, a lawyer, and a used-car salesman (that may be hyperbole), but there is no doubt that it has grown into a feel-good, huge, money-making organization devoid, as Liu points out, of any serious supervision about claims or structure. True, the USGBC has raised awareness, but at what cost to the actual understanding of sustainability? What was not said is that the AIA should have been out in front of this issue rather than allowing sustainability to become just another commercial enterprise. Real sustainability is affordable for everyone, but LEED isn't.

JEREMIAH ECK FAIA
Eck | MacNeely Architects
Boston

My congratulations to Michael Liu for suggesting the emperor has no clothes ["The Shadow Government"]. In my view, USGBC and LEED are a direct threat to our profession—and to our children's survival.

Those of us at May's AIA convention heard Thomas Friedman make that point starkly in his keynote address: Right now, we are all having a Green Party, when what is required is a Green Revolution. At parties, it's about everyone having a good time; in revolutions, it's about change or die. We can build all the LEED-certified buildings we want, but by itself that will do little to solve the problems—not only because 98 percent of the building stock is already here but also because it is the settlement pattern and corresponding lifestyles that require correction. This is only one of the reasons why LEED and the USGBC are actually an impediment to real solutions: Their focus is dangerously misplaced, while providing participants with a feel-good gold star for their foreheads. What worked in third grade seems a poor model for grownups to follow.

Real solutions to a "hot, flat, and crowded" world lie at a scale well beyond the parts of the building, or even the building itself. It is clear that solutions lie at the community, city, regional, and national scales: it's about walkable cities, work/live in the same places, mass transit, higher densities. Finding those solutions likely points to firms that are integrated across disciplines, because solutions are going to be systems-level solutions.

If architects are to remain viable as independent professionals, that is the path that is required to stay ahead of the curve. Without this understanding, architects will simply become a small design cog in a large systems wheel. The bigger vision will be lost, and the course steered will fall to the likes of the USGBC and their unfortunate self-serving bureaucracy. I'd like to see architects at the helm on this one, as we have already given away too many parts of our profession.

In closing, I urge *ArchitectureBoston* to adopt a formal policy to stop printing the LEED letters after architects' names. As licensed professionals, placing LEED after one's name is a tacit admission that you once did not know how to score points, but now you do. Why is that a credential worthy of our profession?

SERGIO MODIGLIANI AIA
Sergio Modigliani Architects
Brookline, Massachusetts

Although ArchitectureBoston's "Government Issue" was both timely and thoughtful, I read with consternation Chris Walsh's characterization of Massachusetts' affordable-housing zoning law, Chapter 40B. To begin, Walsh fails to mention that in the November 2010 election there was a referendum question on 40B, and Massachusetts voters decided to continue the program.

Although it is true that 51 communities have exceeded their 10 percent threshold, which Walsh asserts as evidence of the program's failure, it is also true that, at present, 117 municipalities only need to produce or preserve fewer than 100 units to reach the 10 percent threshold. Walsh alleges that the 40B program eats up open space. This does not reflect the reality of Massachusetts land use in which large-lot zoning is probably the most important determinant of housing development, and particularly so when coupled with Title V and the Wetland Protection Act, neither of which is suspended in determining site acceptability. In fact, increasing housing density under 40B is actually more land efficient. Further, the expiration date of low-income use requirements referred to applies to subsidy or financing programs and does not apply to Chapter 40B developments that are held in perpetuity through zoning.

Citing the Columbia Point development as a failed large urban housing project neglects its complicated history as Boston's largest public housing development, the lurches and retreats of federal housing policy, the geographic isolation of the development, its history as a dump, and its miraculous conversion in 1984 into the mixed-income Harbor Point development.

Walsh's critique may make for good sound bites on the campaign trail, but the inaccuracies of his examples and general lack of understanding of the history and context of affordable housing sadly misrepresent reality, to the detriment of your readers and those they may influence.

DIANE GEORGOPULOS FAIA
Cambridge, Massachusetts
Ms. Georgopulos has worked for 25 years as an architect for MassHousing, the state's affordable housing finance agency.

I opened ArchitectureBoston's "Government Issue" with great anticipation but found little within to be upbeat about. From the editor's opening observation that 69 percent of respondents in a recent student survey believe that community service is honorable while almost no architects serve in elected office, it seems obvious that there is a world of difference between advocating for good design in the public realm and actually serving in public office, unfortunately exemplified by the recent conviction of yet another Massachusetts State House leader.

At a time when popular opinion is running against "big government," our failure to maintain bridges, build a successful public education system, invest in smart growth, or even provide adequate healthcare to all is a failure of political leadership, not government, be it big or small. In a society driven by sound bites and devoid of critical thinking, it is easy to conflate government with politics. But contrary to what we hear, government at all levels is filled with many smart, talented, and even idealistic people who want to be challenged to do the right thing, as James Kostaras notes in "What I Learned."

If, as Vernon Woodworth tells us in "Notes From the Suggestion Box," technology will soon allow us to model performance and regulatory metrics of all sorts, we need political leadership with a compelling vision for this future. And with political vision should come a commitment to honest and timely assessment of government programs.

Idealistic? Yes. Unrealistic? No. But as long as we keep seeing the "problem" as government and fail to demand political vision and leadership, and as long as the electorate is titillated by elk-shooting, combed-over candidates, and not challenging government to be all that it can be, there is no purpose for architects to seek public office.

GEORGE METZGER AIA
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We want to hear from you. Letters may be e-mailed to epadjen@architects.org or sent to *ArchitectureBoston*, 52 Broad Street, Boston, MA 02109. Letters may be edited for clarity and length, and must include your name, address, and daytime telephone number. Length should not exceed 300 words.

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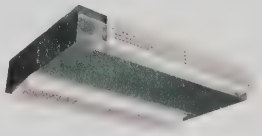
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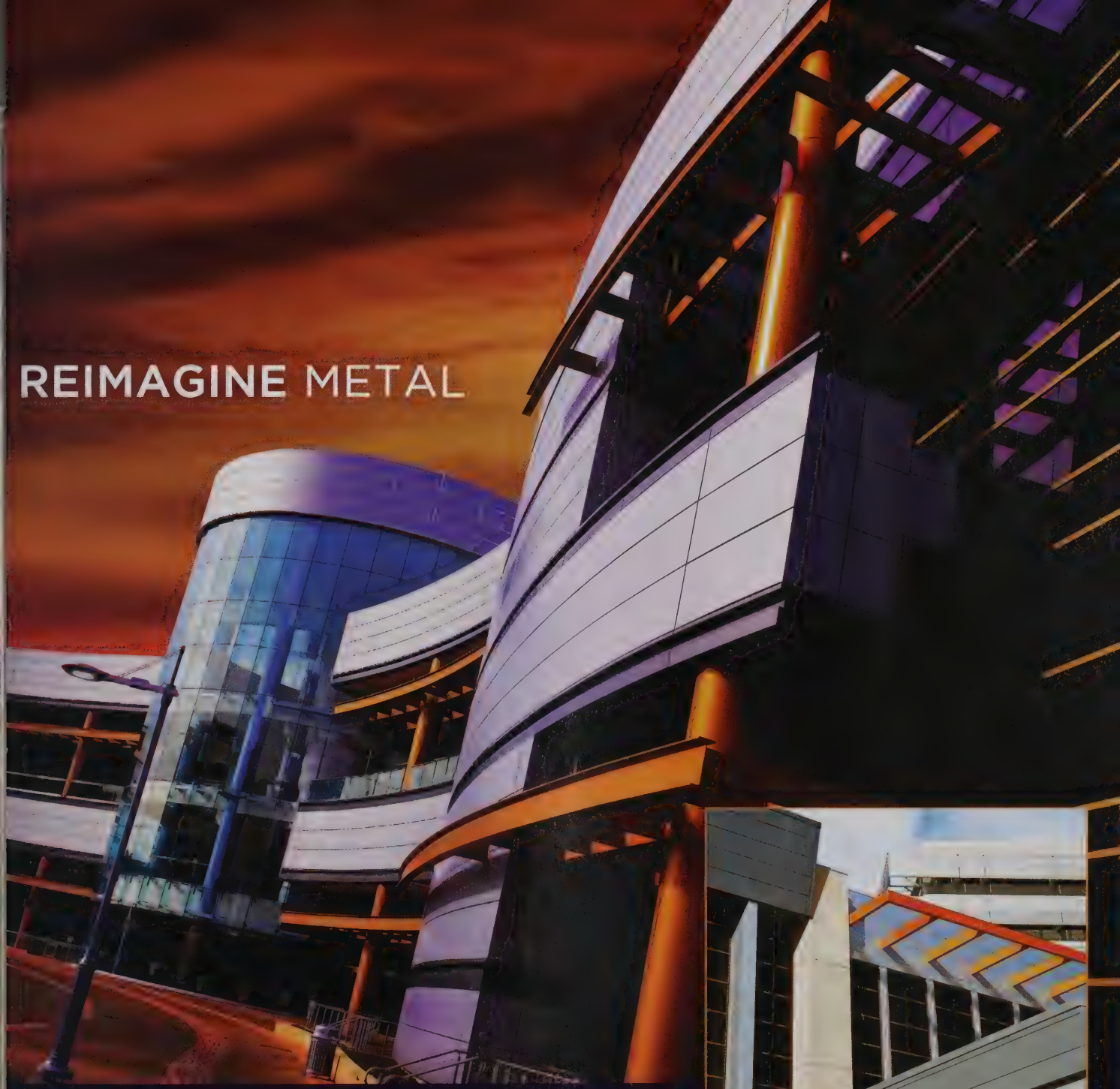
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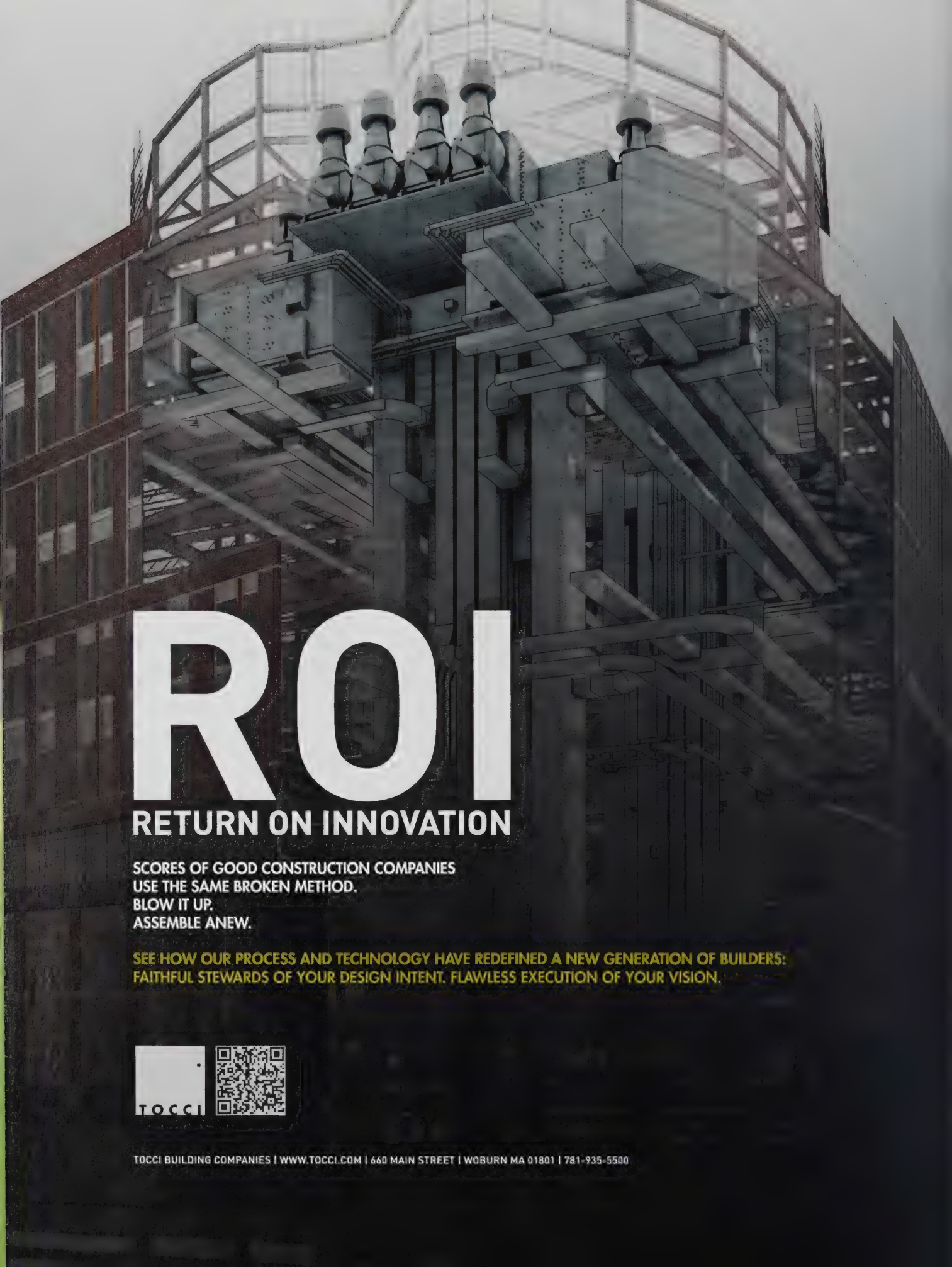
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Jonathan Powers is a PhD candidate in the history and theory of architecture at McGill University.

ABOVE
View of the drafting room, Ford Motor bomber factory, Willow Run, Michigan, 1942. Photo: Hedrich Blessing. © Chicago History Museum.

Architecture in Uniform: Designing and Building for the Second World War

Canadian Centre for Architecture
Montreal
April 13–September 18, 2011

If World War II was remarkable for its blurring of the boundary between civil and military, it must come as little surprise that architecture enjoyed enormous prestige during that era. From the celebrated career of Archimedes, the ancient Greek mathematician and engineer, to the European architectural treatises that have for centuries divided their subject into military and civil, architecture has long been recognized as addressing both concerns. The exhibition *Architecture in Uniform* documents the astonishing variety of ways in which architects and their professional skills were conscripted to serve the world's first fully industrial war and the industrial peace that followed.

The visitor enters the exhibition by passing between wall-sized photos of Hiroshima and Guernica after their respective bombings and then immediately confronts a ceiling-high silo with a broad slit running down its side. Within the silo hangs one line of portrait photos, placed at eye height and ordered alphabetically, of a representative selection of war-era architects and designers: the known and the unknown, the grizzled as well as the green, the militant alongside the artistic.

Eschewing the tired distinction between Axis and Allies, the exhibition never loses sight of architecture's paradoxical power to ravage cities or of war's human dimension. From Norman Bel Geddes' marvelous scale models of naval engagements to Hugh Casson's ingenious ideas for camouflaging buildings to Hans Stosberg's banal economic development plan for Auschwitz, the exhibition portrays architecture as both inspiring and terrifying. Ultimately, the exhibition's moral even-handedness, intelligent thematic structure, and elegant physical design ensure the impression of architecture as a discipline that demands respect not only for its strategic significance but also for its pervasive ethical gravity.

James McCown is a Boston-based journalist and photographer specializing in architecture, design, and real estate.

RIGHT
Late-19th-century dressmakers' patterns, from *Authentic Victorian Fashion Patterns, A Complete Lady's Wardrobe*, Kristina Harris, editor, Dover Publications, 1999.

Tailoring Form

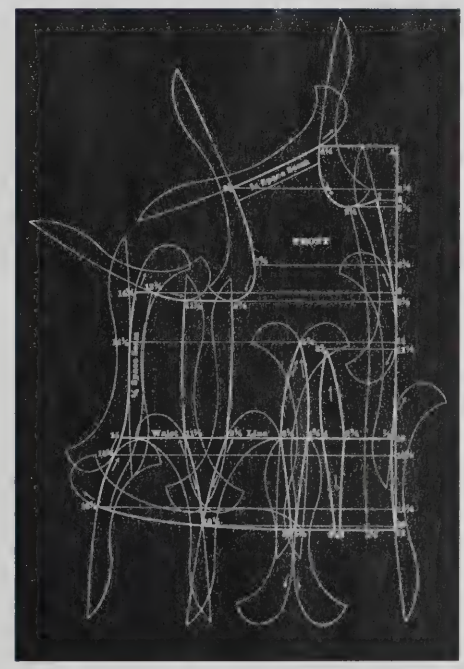
pinkcomma gallery
Boston
April 8–May 15, 2011

What do a Renaissance cathedral and a 1950s finned car have in common? They were both produced using templates, which *Webster* defines as a "gauge, pattern, or mold used as a guide to the form of a piece being made."

Tailoring Form, a small but superb exhibition, includes a wide range of templates, increasingly scarce artifacts in an age of digital design and production.

Filippo Brunelleschi used full-size wood templates to produce the massive stone ribs of the dome of the Florence cathedral. General Motors designers spent weeks using curved rulers and clay to shape the swooping surfaces of the Firebird III concept car. Other exhibition items explore how airplane, boat, and even dress design are all beholden to the template. The curators, Natalie Fizer and Glen Forley of New York, insist the template be celebrated in and of itself.

Bravo, Fizer, Forley, and pinkcomma. *Tailoring Form* is really a homage to the ingenuity, patience, and sweat that was design in the precomputer age.





Seen

The Sea Ranch
Sonoma County, California

Carl Solander AIA is the founder of Reverse Architecture in Somerville, Massachusetts, and teaches at Wentworth Institute of Technology.

ABOVE
Sea Ranch. Architects: MLTW and Joseph Esherick, with Lawrence Halprin. Photo: Jim Alinder.

For the author's photos of the Sea Ranch, visit www.architectureboston.com

We arrived awestruck, ill, and exhausted. My wife and I had driven 100 miles north from San Francisco, our infant daughter asleep while our stomachs roiled with the dramatic hairpin turns of Route 1. Finally, we could stop and take it in: the Sea Ranch.

I had learned about this place mostly through hints and references, maybe an errant slide slipped into a lecture on vernacular influences in Modernism. Sea Ranch was not a hot topic of study for my generation, what with the rise of the computer and its formal exuberances. But perhaps you have to first delve into the fantastic and immaterial to fully appreciate something so direct and tangible.

A brief impression: houses of weathered redwood and cedar, spread across the landscape in a more spacious version of a cul-de-sac suburb, displaying every imaginable variation of the shed roof, all interconnected by the automobile, evidence of which is camouflaged within the undulations of the bluffs.

Somehow, I could barely find the time to seek out all the individual architectural gems; I was too overwhelmed by the whirling grasses and the crashing surf. The great achievement of Sea Ranch is its concealment of architectural vicissitudes within nature. The suburb recedes as one walks, and the surreal quality of a human landscape superimposed onto a natural one takes hold. The joy of Sea Ranch is to wander along this edge, looking in one direction into the infinity that is the Pacific and in the other at weathered walls, gray receding into waves of green. We stood on this path with other visitors, clutching my daughter as we watched seals on the beach below. Her sudden calm within the blustering wind struck me as fitting.

Received

Back to School

Louis I. Kahn: Conversations with Students
By Louis Kahn
Princeton Architectural Press, 1998
The delight in this slim volume is its straightforward simplicity: the unadulterated words of a poetic teacher. This is one title in a nine-book series that includes Mies van der Rohe, Ian McHarg, and Peter Smithson.

The Study of Architectural Design: With Special Reference to the Program of the Beaux-Arts Institute of Design
By John F. Harbeson AIA
Pencil Points Library, 1926
(Reissued by W. W. Norton & Company, 2008)
Frustrated with answering the same questions over and over from his students, Harbeson created this guide to the Beaux-Arts educational system—the dominant idea of American architectural training through the 1940s. Follow the illustrated assignments and indulge your inner classicist.

Citizen Architect: Samuel Mockbee and the Spirit of the Rural Studio
Directed by Sam Wainwright Douglas
DVD (60 minutes), Big Beard Films, 2010
This film revisits the familiar but still inspirational tale of Auburn University's design/build program in impoverished Alabama—this time with new interview footage of the late architect/teacher Sam Mockbee FAIA, the program's charismatic founder; conversations with clients; and commentary by Peter Eisenman, Cameron Sinclair, Michael Rotondi, and others. The legacy continues.

Inventing American Modernism: Joseph Hudnut, Walter Gropius, and the Bauhaus Legacy at Harvard
By Jill Pearlman
University of Virginia Press, 2007
Pearlman presents Hudnut as an unsung hero—a pioneer of American architectural education, a public intellectual, and an awful self-promoter. Hudnut hired Gropius, Gropius soon became a rival, and the rest, as they say, is history.

101 Things I Learned in Architecture School
By Matthew Frederick
The MIT Press, 2007
Frederick's witty and clear reflections mix with succinct philosophy. His knack for distilling wisdom now extends to a series of professions: film, culinary arts, fashion, business, and others; browse them at 101thingsilearned.com.

Back to the Future

2940 Chain Bridge Road, Washington, DC

Ann Hershfang
HON. AIA, HON. BSA
is cofounder of WalkBoston. She served on the boards of Massport and the Massachusetts Turnpike Authority, and as undersecretary of transportation for the Commonwealth of Massachusetts.

The house at 2940 Chain Bridge Road was commissioned by Hershfang's parents and featured twice in *House Beautiful* in 1951 for its climate-control features and for its kitchen design. For PDFs of the original stories, including drawings, see: www.architectureboston.com.

Image: Reprinted with permission of *House Beautiful*, © 1951. Photograph by Ezra Stoller © Esto.

My parents' house was quite "green"—so green, in fact, that it was a case study in *House Beautiful*'s "Climate Control Project" and featured in the April 1951 issue. Designed by Chloethiel Woodard Smith FAIA, it had radiant heat and a porch overhang to keep out summer sun and admit winter sun. All the rooms had louvered windows at the bottom on one side and at the top on the opposite side to encourage cross ventilation. An air space between the ceilings and roof, a large hall fan to exhaust hot air, and sprinklers that cooled the roof when it got too hot kept us in reasonable comfort during the DC summers.

From every room, you could look out through glorious plate glass into woods (not an easy feat on a 0.7-acre lot). The house was on one floor, which was very useful as my mother aged. Like other Modern houses of the period, its bedrooms were compact, its closets even more so—not a bit elaborate but splendid.

The house is still there, on its fourth owner since us. I go back every now and then. Each successive owner has made changes. The third one joined our three bedrooms into one; the current owners have added an additional story and an outside swimming pool, an excellent use for a difficult yard. The house still has its plate glass, openness, view, and beauty. With its idiosyncratic style, it has always been slow to sell but always adored by its owners. The current ones are no exception.



Glass wall expands visual dimensions of living room, provides sun in winter, year-round view



Focus

Sensing Place: Photography as Inquiry

Since 2000, MIT professor and landscape architect Anne Whiston Spirn FASLA has taught "Sensing Place: Photography as Inquiry," a course that explores seeing as a way of knowing and photography as a way of thinking. Students keep journals and develop portfolios of images that investigate a single place in the Boston area throughout the semester.

For a selection of student photographs: www.architectureboston.com

For the course website: architecture.mit.edu/class/landphoto

LEFT
Charles River/Storrow Drive, 2009, by Ethan Lacy.









Covering the Issues

Gretchen Schneider AIA, LEED AP is the principal of Schneider Studio in Boston.

Read all about it... *Library Journal* presents its top 20 "New Landmark Libraries" (May 15, 2011). In this cover story and related print and online commentary, the editors showcase relatively unknown-yet-exemplary small libraries across the US, with the hope of inspiring other communities. Current design trends include sustainability, flexibility, transparency, and collaborative spaces, which together help these libraries become more effective community centers. Even though technology is rapidly transforming the book, the need for free access to information—especially for children, elders, and immigrant populations—is as powerful today as it was when the Boston Public Library launched the institution in 1852.

The end of the world as we know it... Pulitzer Prize–winning author Junot Díaz tackles "Apocalypse: What Disasters Reveal," in a ***Boston Review*** cover story (May/June 2011). The Haiti earthquake killed an estimated 220,000 people, left iconic historic and cultural buildings in ruins, destroyed the electrical grid, and left 10 percent of the population homeless. Díaz notes that the Greek root of the word apocalypse means "uncover and unveil," arguing that the calamitous effects of the earthquake—as well as the recent Asian tsunamis and Hurricane Katrina—were caused by human actions, not nature. From issues of deforestation and poor infrastructure to depleted coral reefs and global inequality, Díaz reminds us that Mother Nature is not subject to moral judgment.

Dollar signs... Today, 3.5 million people live in cities; by 2050, that number will nearly double, with the most explosive growth happening not only in Brazil, China, and India but also in smaller nations including Vietnam, Colombia, and Chile. Peter Loscher, head of Siemens (makers of urban infrastructure such as computer-operated trains, electrical transformers, and water-treatment systems), sees enormous market potential. In "Urban Outfitter" (***Forbes***, May 9, 2011), writer Daniel Fisher describes Loscher's vision, explaining that "even shantytowns need electricity and clean water." Siemens is designing special equipment that functions in high humidity, with solar power, and at a lower price point, as it's partnering with explosively growing cities to improve carbon emissions and energy efficiency. Good design is great business?

Preservation gets pummeled... Rem Koolhaas's recent exhibition and lecture at the New Museum on the state of historic preservation has prompted a torrent of commentary. Architectural critic (and *ArchitectureBoston* editorial-board member) Sarah Williams Goldhagen provides important context in "Death by Nostalgia" (***The New York Times***, June 10, 2011), explaining how preservation has become a means for planning, design review, and development (yes, and actually preserving valuable old buildings, too), where projects are often evaluated in terms of economic dealmaking rather than historic importance. Writing for ***ARTINFO*** (posted May 16, 2011), Ben Davis suggests that the "solution is not a better theory of preservation, but a more humane model of economic progress." Meanwhile, ***The New Yorker***'s Paul Goldberger (posted May 10, 2011) argues that the real issue is not the limits that preservation imposes but the marketing of architectural celebrity. Time will tell?

LA story... Sometimes ***GOOD*** is great. The Spring 2011 edition of this five-year-old quarterly explores "critical issues facing global cities," with Los Angeles as its focus. Touching on schools, urban ecology, riots, homelessness, houses of worship, water, density, and the politics of mixed use, its wide range of contributors include architects and designers to writers who shaped LA's image, from novelist Joan Didion to urban thinker Mike Davis. Directly and indirectly, the built environment pervades all. Chock-full of hip infographics and photography, the print magazine is only the first step; be sure to check out *GOOD*'s robust website and event schedule, too.

The 80 Percent Challenge

MassINC
Boston
May 19, 2011

Peer pressure: it's not just for high school anymore.

In 2008, Massachusetts passed the Global Warming Solutions Act (GWSA), putting the Commonwealth on the leading edge of US climate-change policy with an ambitious goal: reduce greenhouse gas emissions by 80 percent by the year 2050. That target will require significant cultural shifts. Realizing this, independent think tank MassINC conducted a statewide survey to gauge public response to climate change and then convened an expert panel and a public forum to discuss the results.

For the most part, the findings confirmed information many attendees had probably seen elsewhere, such as the fact that most people simply don't rate climate change as a "high priority" issue (only 32 percent in this study). Jobs and the economy, healthcare, and education all dominate their concerns. But one finding did jump out: Even among those people whom the study defined as "convinced" (people who believe that climate change is both the result of human activity and a serious threat), only one-third of those aged 18 to 29 are taking personal action to conserve energy; thus the cohort widely considered to be most concerned by climate change is doing the least. The panel offered the explanation that, no matter one's age, environmental behavior, like behavior in general, is strongly influenced by the actions of peers, known as "normative messages."

Panelist David Cash, the undersecretary for policy in the Massachusetts Executive Office of Energy and Environmental Affairs, provided an illustration. In communities where one household installs PV (photovoltaic) panels within view of neighbors, it is often just a matter of time before panels start to pop up throughout the neighborhood. Similarly, as an audience member observed, residents of city blocks tend to recycle either almost entirely in unison or not at all. Whether these examples provide evidence of environmental peer pressure is debatable, but normative messages have proven to be successful as part of other cultural-shift campaigns, such as anti-smoking initiatives.

Ultimately, meeting the GWSA's ambitious targets will require tougher regulations at a policy level. But if this research is any indication, individual action can influence the action of others, and collective action in turn builds support for policy. It is through the creation of this "culture of climate protection" that real change is possible.

Keller Roughton AIA, LEED AP is an architect at Gensler in Boston and a member of the BSA Committee on the Environment.

For more information: www.massinc.org/Research/The-80-percent-challenge.aspx



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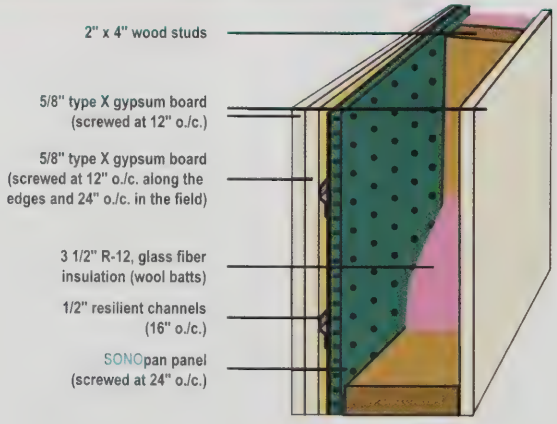
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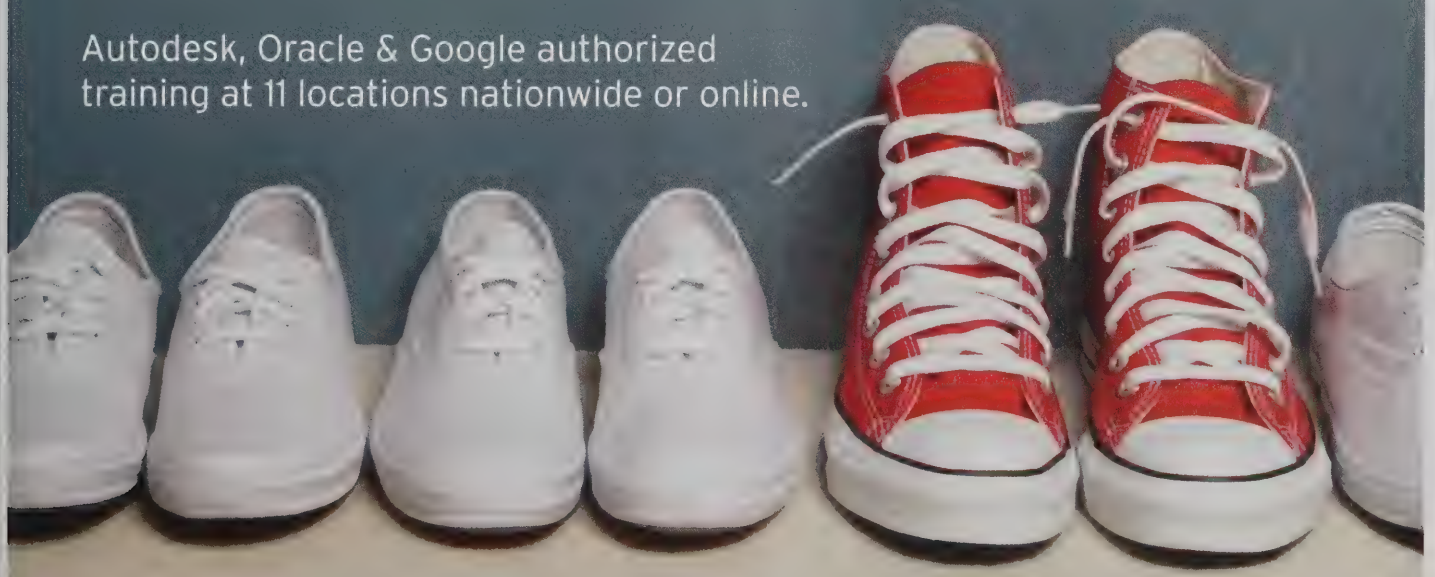
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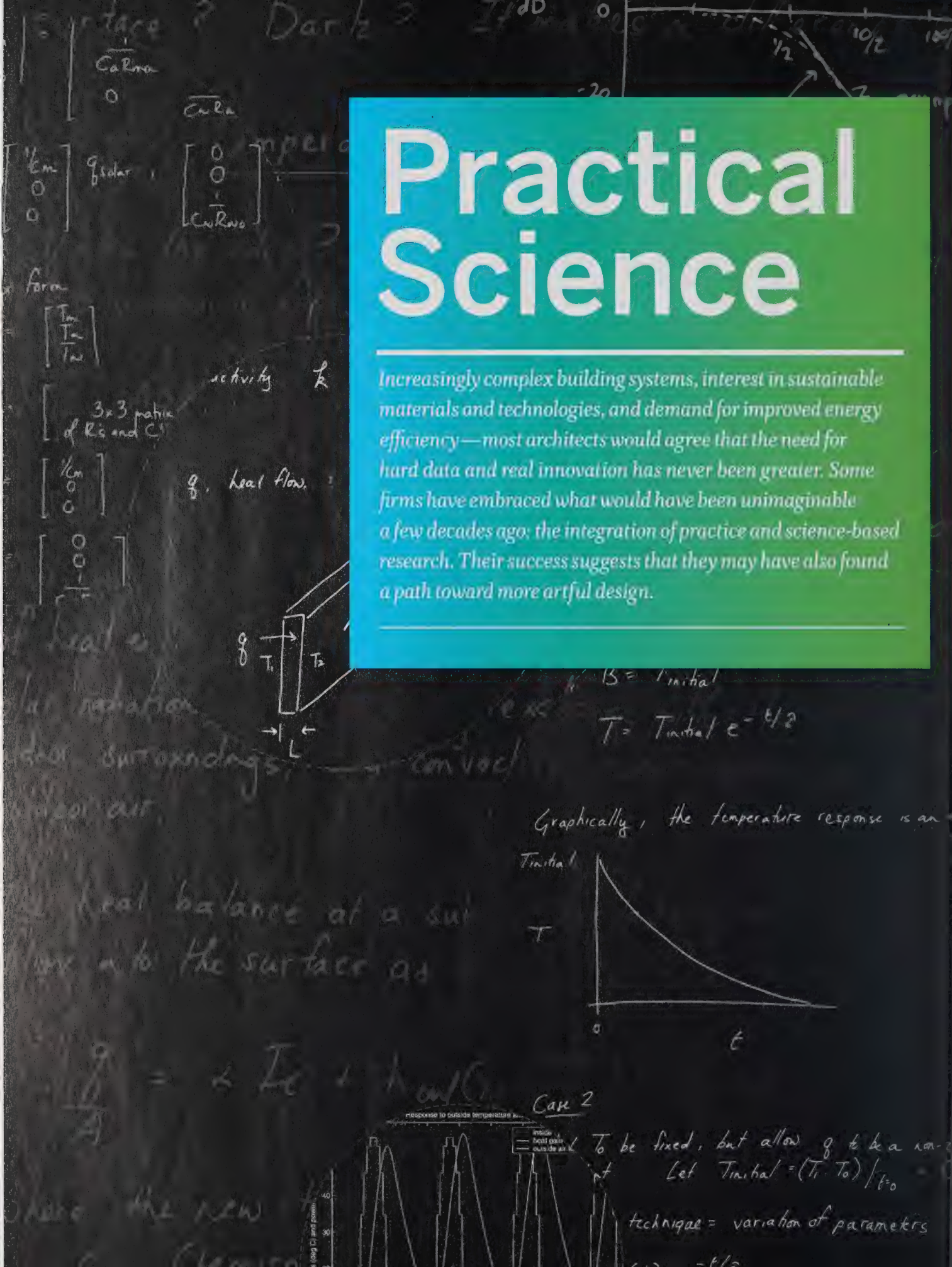
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Practical Science

Increasingly complex building systems, interest in sustainable materials and technologies, and demand for improved energy efficiency—most architects would agree that the need for hard data and real innovation has never been greater. Some firms have embraced what would have been unimaginable a few decades ago: the integration of practice and science-based research. Their success suggests that they may have also found a path toward more artful design.



SOM/CASE

Nicholas Holt AIA

The Center for Architecture, Science, and Ecology (CASE) is a unique scientific research partnership that was formed by Skidmore, Owings & Merrill (SOM) and Rensselaer Polytechnic Institute's School of Architecture in 2008. CASE's ambitions are manifold. Perhaps the most important is to produce desperately needed, game-changing technologies that will enable the aggressive net-zero goals that are being adopted in the US and worldwide. A second priority is to use the synergistic, academic-professional partnership to confront the ways in which new architectural technologies are developed and brought to market.

Applied research as it is currently practiced in the building industry is often slow and inefficient, and results in building systems that do not meet their potential when confronted with the practical realities of practice. The architecture profession has in large part not taken advantage of its power and responsibility to truly innovate. RPI and SOM hope the CASE model presents industry and universities with a way to change that.

SOM views CASE as a complementary practice, not a separate institution, and CASE's headquarters are located within SOM's Wall Street office in New York City. CASE is led by a tight group of academics and professionals: Professor Anna Dyson of RPI's School of Architecture is the director and Associate Professor Jason Vollen is the assistant director, with Kenneth A. Lewis, a managing director at SOM, and me, technical director at SOM, acting as CASE principals. Currently more than 24 PhD, master's, and undergraduate students actively do research and attend classes led by five professors and other guest scholars. Members of SOM's staff collaborate with CASE investigators daily.

CASE researchers work primarily in the area of technology transfer. They mine discoveries and developments in fields unrelated to architecture, such as optics, aerodynamics, and the biological sciences, and develop them into full-scale building systems. Currently under development are sustainable building systems, such as a modular daylighting system that includes helioptic concentrators that improve the efficiency of photovoltaics; high-performance eco-ceramic masonry walls; electropolymeric dynamic shading systems for buildings; and an active-photoremediation wall system using plants to purify air, reducing the need for outside air.

SOM's real-world experience brings considerable influence to bear on the development of CASE's research, particularly in making conceptual ideas scalable, manufacturable and, ultimately, commercially viable. These technologies must be proven to be maintainable, aesthetically compatible where applicable, and usable in real construction. They must be shown to perform at a level whose impact is great enough to make their costs justifiable. Prototypes must withstand mockup testing and the rigorous standards of health and life-safety codes.

The firm's involvement allows CASE's investigators to focus on in-depth research while leveraging SOM's expertise to challenge ideas and adapt solutions to real-life projects. The collaborative environment works. CASE investigators have successfully developed comprehensive testing prototypes and submitted their work at the proof-of-concept stage to the rigorous scrutiny of peer review, and their papers have been published in academic journals. SOM's involvement has also been helpful in securing federal and state grants.

The benefits of the CASE collaboration include the satisfaction of attending to the urgent business of creating a sustainable world, and in playing a crucial role in the development of systems that are imaginative, ambitious, and potentially game-changing. In turn, the advanced high-performance buildings SOM is working on provide teaching moments for some of the most imaginative minds working in building-systems research today. What is priceless, however, is the dialogue resulting from the exchange of ideas between academics and professionals that enriches all who participate in it.

Nicholas Holt AIA, LEED AP is the technical director of SOM in New York City.

BELOW
Detail, IC Solar Façade, daylighting system with integrated photo-voltaic cells. Licensed by HeliOptix. © CASE/Rensselaer.

FOR MORE INFORMATION
www.som.com/content.cfm/case_center_for_architecture_science_ecology

LEFT
Notes on thermal dynamics and solar heating from "Building Technology Laboratory." Fall 2004, a course taught by MIT professor Leslie Norford, available at ocw.mit.edu/courses/architecture. Illustration by Amanda Sim, Stoltze Design.





Yanel de Angel
AIA, LEED AP is a project architect at Perkins+Will in Boston, where she was the recipient of a 2010 Innovation Incubator grant. Her work has also been published in *Perkins+Will Research Journal*.

ABOVE
Detail, solar-responsive shading elements designed with a custom plug-in for Revit developed by Perkins+Will that allows import of analytic data and parametric control of model geometry. For more information: *Perkins+Will Research Journal*, Volume 03.01.

For more information, including links to the *Research Journal*, the Perkins+Will Precautionary List (of suspected harmful building materials), and the 2030 Calculator (measuring project compliance with the 2030 Challenge): www.perkinswill.com/purpose/innovation.html

For information on the Innovation Incubator: vimeo.com/22455359

PERKINS+WILL

Yanel de Angel AIA

In 2009, Perkins+Will made a commitment to support additional research initiatives within its practice as a means of solving our clients' increasingly complex challenges and advancing the profession. Although these initiatives grew out of the firm's cultural focus on the convergence of design, technology, and research, our experience indicates that these initiatives have in turn fostered an environment that is even more open to innovation and collaboration.

With more than 1,200 employees in 23 offices, Perkins+Will has organized these initiatives under the oversight of its Research Group, which includes full-time researchers whose investigations include biomimicry and ecological systems; strategies for operational efficiency; building technology and performance; design process benchmarking; policy research; carbon and energy analysis; and organizational behavior.

Currently, two initiatives within the firm focus on developing and disseminating a new generation of science-based research. The first is the *Perkins+Will Research Journal*, a biannual publication available online and in hard copy that documents some of the firm's investigations, representing a range of research from behavioral studies to building science. All research articles go through a rigorous internal and external peer-review process prior to publication. Examples include articles on design strategies for double-skin façades and their impact on energy performance; energy modeling; design considerations for pools in cold climates; the effect of heat flow and moisture on exterior enclosures; and a comparative analysis of the environmental and economic performance of flooring materials. The value and significance of this publication is that practice-oriented research is documented and shared both within our global practice and with the larger design community.

The second initiative, the Innovation Incubator, is a funding program that supports small, focused research projects proposed by staff members with micro-grants of money and time. Launched in March 2010 with the goals of providing the opportunity for invention and creating a culture of innovation within the firm, these micro-grants provide incentive for proactive idea exploration, technical development, and design collaboration. After project completion, each participant is expected to provide a tangible product that explains the aim, procedures, and outcome of the project. Participants make detailed formal presentations of their work to their home-office colleagues, and their work is disseminated across the firm through summaries published on the firm's intranet.

In its first year, 12 projects were selected from 90 applications, representing seven offices and 20 participants. Projects included research on acoustics, energy analysis, air pollution mitigation, and energy consumption in food production, as well as an array of projects related to planning, practice, and user-based design. The program allows and encourages a range of formats: technical white papers; events and installations; project prototypes; and process refinements. Already, several projects have found second lives: Some have influenced the firm's business policy, some inspired conferences, and others are candidates for extended internal research.

As the experience of Perkins+Will has demonstrated, practice-oriented research has a logical and comfortable role in the firm environment that is based on parallels between research and architecture. As the editors of the *Perkins+Will Research Journal* wrote in the second issue, "Architectural design requires immense amounts of information for inspiration, creation, and construction of buildings. Although uniform sets of systems, materials, and construction processes are considered during this process, every design is an answer to a set of unique questions and circumstances. Therefore, research becomes an integral part of the design and construction of buildings and environments, where inquiry into existing knowledge, study, and adaptation to particular circumstances leads to the development of new knowledge."

PAYETTE

James H. Collins, Jr. FAIA

Payette's practice has always been focused on challenging not only the status quo but also our own well-established thoughts and beliefs. We embraced the pursuit of innovation and invention within the context of a traditional design process but acknowledged the lack of appropriate tools beyond our instincts. Although we could often justify (or post-justify) the directions we took with calculations or measurements taken from the final design and construction, we were rarely able to pursue rapid iterations of design modifications in a controlled setting.

Over the past 10 years, however, the development of new software tools made specifically for design analysis, coupled with a surge of interest from academia, has enabled us to bring true rigor to this fundamental part of our work. With architecture schools throughout the country emphasizing technology, sustainability, and process, we have been able to bring new architects into the firm who leverage this technology and contribute to the design process at its earliest stages.

Of course, Payette is not unique in pursuing this agenda. Firms across the country have embraced science in myriad ways. Some have focused their practices on making each project an academic research endeavor. Others have formed elite "skunk works" teams within their organizations to pursue cutting-edge technologies, often with institutional partners. Payette has taken an approach that lives between these two extremes, incorporating tools as they come online but keeping specific client and project needs at the forefront. The focus is on the practical application of design research.

To turn this concept into reality, Payette recently established a "Research and Innovation Initiative." This effort is led by representatives from each area of the firm, who make research tools—such as modeling software, prototyping equipment, and an in-house Wiki—available to all design teams, leaving the teams to determine how to implement these resources. As part of this initiative, a building scientist joined the firm to provide expertise in the physics, engineering, and analysis of building performance.

Some examples of specific decisions that were a result of this approach may be useful. In Pakistan, we were able to develop a modern version of the traditional wind catcher, using earth ducts to provide natural ventilation and cooling throughout a new college campus. For a small community college in upstate New York, we were able to analyze multiple façade technologies to determine the cost benefit of double-wall construction under varying thermal conditions. For a small cheese production facility in suburban Boston, we were able to investigate multiple options for the development of a zero-net-energy installation specific to the needs of this farm.

The defining trait of these projects is that the results have relevance far beyond the immediate needs of the projects; this allows us to justify the additional overhead expense of the exploration. These investigations inform the entire practice and should streamline and influence future decisions. Ideally, significant research and results can be taken beyond our walls to the greater professional community through our online presence, conferences, and publications.

Ultimately, we see this as a question of leverage. We are not trying to live on the bleeding edge, inventing new technologies or materials, but we want to use all of the resources at our disposal to attack every problem we confront. Our approach to research is about strategic investigation that helps to rationalize our process, bring rigor to the work and, more than anything, develop the intuitive sense that drives all formative design work.

James H. Collins, Jr.
president of Payette in Boston.

BELOW
Detail, thermal buffer zone with automated

Troy, New York
© Payette.

FOR MORE INFORMATION



J. Frano Violich FAIA is a principal of KVA and its subsidiary, MATx, in Boston

RIGHT
Detail, Smart Curtain (prototype) a moveable, soft partition with integrated solid-state technologies (including LED, USB, photovoltaics) for IBA Soft House, Hamburg Germany. Photo courtesy KVA/MATx

FOR MORE INFORMATION
www.kvarch.net

KVA

J. Frano Violich FAIA



We practice at a time when the stakes could never be higher for architecture to respond to the challenges of our time: health, mobility, economy, and the environment. Yet the compartmental roles institutionalized by practice have reduced the design process to a limited number of repeatable steps that favor design service over design inquiry. Architectural exploration takes place primarily within academic settings or with a handful of specialized consultants, a fact that further distances the architect from the direct hands-on investigations required to address these global challenges.

In architecture schools in the late '70s and early '80s, research was limited to social or environmental factors driven primarily by program. This was followed by a tendency to explore history and the urban fabric as a design research tool. What I found missing as I entered the profession was an understanding of how systems worked, especially infrastructural systems and their implications for urbanism and architecture. Further, at a more detailed level, there was no opportunity to investigate architecture through its material properties. This was the root of Kennedy & Violich Architecture's beginnings and the subsequent establishment of the firm's material research division, MATx.

One of the greatest challenges for the profession is to establish a place within the discipline that integrates research with the design process and the workplace. As digital drafting tools evolve, so, too, do fabrication tools, and they are becoming increasingly synergistic within the design process. Details of an exterior building envelope that have been generated through an algorithmic script to respond to climatic exposure can be 3D-printed or routed to test design characteristics from the assembly of parts to its overall look and proportion, all of which can be done without even leaving the workstation. Almost half of KVA's office in a converted bottling plant is dedicated to research and fabrication, including spaces for optoelectronics, digital prototyping, and analog equipment, such as table and band saws, drill presses, soldering guns, and sewing machines. The intersection of digital and hands-on fabrication is a foundation of KVA's research process. It is not always a pretty sight to come into the shop and see the latest swatches of high-performance textiles, flexible CIGS photovoltaic panels, electroluminescent panels, digital circuitry, lithium-ion batteries, milled lumber, plywood, and recycled plastic strewn about the workbench and even sometimes the floor. However, research is by nature a messy business. It raises many more questions than answers and, in this sense, is less noun than verb. *How* research is conducted is important, yet equally critical is *where* it is done, because spaces dedicated to research offer the room for an expanded range of projects to occur, from industrial design to temporary installations and architecture, promoting an office culture where "making" exists side by side with "drawing."

The work now coming out of KVA/MATx has never been more diverse: a law school at the University of Pennsylvania; a prototypical urban solar rocking chair and charging station; sustainable housing in Hamburg; portable power and light for communities in the Amazon; a ferry terminal in New York City; and the planning of 5½ miles of the Upper Mississippi in Minneapolis as an urban ecological landscape. Yet the work has become more focused, primarily due to a commitment to practice that applies speculation and inquiry to contemporary conditions that affect our quality of daily life. Maybe it's time to step out of the office and plug in to the shop.

Seeding Knowledge

The BSA Research Grants in Architecture

by Carol Burns FAIA

RESEARCH, BROADLY DEFINED, is systemic inquiry directed toward the creation of knowledge. Research adds to a profession's body of knowledge.

Why, then, has the architecture profession failed to embrace formal research as part of its culture?

Although architects in practice regularly engage in investigations in which they gather, evaluate, interpret, and analyze information, these efforts are rarely considered "research." Formal research is framed by protocols, including statements regarding hypothesis; methodology; and the formulation of claims, evidence, and generalized conclusions. In sharing or disseminating research, the peer-review process upholds the accepted standards of a discipline and prevents publication of irrelevant findings, unwarranted claims, unacceptable interpretations, and personal views.

As a field, architecture is not effectively using and creating knowledge. Peer-reviewed research is rarely incorporated into work in professional practice. Research protocols rarely frame professional efforts, and results are rarely documented for sharing. As a consequence, architects rediscover or repeat what is already known and fail to focus on the development of new knowledge. The tradition of research has not been adequately recognized and honored, and the vital role of research has been undervalued as well as underfunded.

Recognizing the importance of research, the Boston Society of Architects (BSA) established a program in 2004 to provide funding to individuals and teams to conduct research in architecture. The BSA Research Grants in Architecture program supports original research in any area of architecture by anyone with a clear methodology and the potential to contribute to knowledge. With a focus on practice-based and practice-oriented research, the program has funded 55 projects in areas including: materials and technology (about one-half of all projects funded); social, economic, political, and cultural dimensions of architecture; aspects of physical design; and historical topics. Many projects cross two or more of these categories, speaking to the interdisciplinary nature of architecture.

The BSA program is distinguished in many ways. Grant amounts and recipients have varied widely depending on the scale and need of the project, from $2,000 awarded to students to $10,000 awarded to support studio-based projects and $40,000 awarded for more significant research projects that can bring together professionals, industry representatives, and academicians. No other program offers grants of this size targeted to support substantial work by interdisciplinary teams. After seven years, the BSA Research Grants in Architecture program now occupies a unique niche in architecture as a "long-lived" program.

What has the program accomplished? The completed projects have been shared as lectures, publications, and books. In direct response to this initiative, the AIA has created new research programs, including the Upjohn Award. The BSA has contributed to the creation of a culture of research within the profession. Where should it go? In my view, architecture is a "generalist" profession that demands knowledge across a wide spectrum, and practitioners should be able to search for and obtain useful "evidence-based" knowledge at their desks. Presently, the BSA takes the first step by posting on its website all abstracts and reports of completed projects. Alliances with other web-based publications are being explored to support peer review and enhance accessibility.

The field of architecture is constantly evolving, and research has never been more important to our profession than now. As Thomas Fisher states in the pioneering chapter on research in the *Architectural Graphic Standards* 2007 edition, "For architecture to flourish as a profession, we must have a reliable and researchable base of knowledge shared among ourselves and proven in ensuring people's health, safety, and welfare."

Carol Burns FAIA is a principal of Taylor & Burns Architects in Boston. A cofounder of the BSA Research Grants in Architecture program, she has taught at Yale, Harvard, MIT, Wentworth Institute of Technology, and other schools. Served as the director of the Harvard Institute of Affordable Housing, and has been co-editor of several volumes including *Site Matters* (Routledge, 2005). She currently serves as the chair of the Boston Art Commission and designator for the Henderson Foundation.

For information on the BSA Research Grants in Architecture program, summary reports of past projects, and interviews with recipients, see www.architects.org/grants.



Performance Anxiety

Good intentions are one thing, but how do we really know how well our buildings measure up?

by Lisa Ann Pasquale

Science is what you know. Philosophy is what you don't know.

—Bertrand Russell (1872–1970) English philosopher, mathematician

The days of architects justifying design decisions with interpretations of esoteric philosophy are all but numbered. Wright rearranged clients' furniture, Le Corbusier's roofs leaked, and Mies van der Rohe's Farnsworth house is the epitome of dysfunctional Modernism. Contemporary clients, however, are less accommodating (and more litigious) and rarely consider hubris a desirable quality in the person paid to design the roofs over their heads.

Architecture is a unique form of commercial production in that every building is a prototype—our crash-test dummies are, generally, the previous client. Each building has a unique combination of form, use, construction, systems, site, and project team, each with an impact on performance, energy, environment, cost, and quality. Assurances to clients ride on a plethora of assumptions. The only way to establish if the assumptions are valid is to revisit buildings after occupation, and systematically and objectively monitor, measure, and evaluate their performance. Similarly, the only way to substantively move the practice of architecture forward is to establish practice methodologies based on solid, scientific evidence rather than intuition and anecdote.

The idea is not new. First developed in the 1970s, post-occupancy evaluations (POEs) took a "real world" scientific approach to assessing the performance of buildings and, by extension, the built environment. Incorporating a host of comparative methods, these were typically conducted about two years after occupancy of new buildings and addressed how well the buildings met user needs, their environmental performance and, in some instances, their operating and projected lifecycle cost.

Traditionally, POEs were associated with recently built projects, especially those with ambitious energy and environmental targets or unique technologies. Thus, they generally did not address the energy impact of the existing building stock and had little influence on retrofit and renovation efforts. But perhaps the greatest failing of the approach was its lag time: project teams received feedback years after the initial design work. Designers often felt that their thinking and methodologies had self-evolved enough in the intervening years that the feedback was no longer relevant, making it difficult to change design practices. To ensure that critical lessons took root, feedback needed to be integrated more effectively into the project process, and evaluators needed to assess and report on buildings that designers felt still represented the pinnacle of their technical prowess.

Building Performance Evaluation (BPE) has evolved out of decades of efforts to address these issues. BPE refers to a broader application of POE and scientific assessment techniques; unlike POE, it extends into the construction phase and can be easily applied to existing structures and renovations. In construction phases, these techniques are used as an advanced means of quality control. Triple air-pressure tests, for example, verify airtightness at key stages of completion to ensure that detailing and construction methods are meeting the intended technical standards. Periodic quality checks also ensure that construction crews develop their own skills and processes to more effectively monitor their own work. They also maintain a dialogue about quality between the design and construction teams so that specifications and details can be improved with input from builders. This is a clear advantage to teams who consistently work together.

The process has uncovered problems with "rules of thumb" and regulations, sometimes sending designers unexpectedly back to revisit the fundamental principles of good design. A recent co-heating and thermography survey of masonry townhouses built to 2006 regulation standards in the UK showed massive heat losses through the roofs above party walls. Previous regulations assumed that heat loss from dwellings through party walls was zero. However, the study consistently showed that poor detailing and construction resulted in thermal bridges, a lack of cavity closures, and air gaps, which drove convection currents in the cavities. These were acting as thermosyphons, drawing heat from the adjacent units into the cavities and then to the outdoors through the cavity roof and walls, accounting for up to 30 percent of the building's total heat loss. Findings like these have the potential to change industrywide practices, influencing both regulations and strategic investment.

Every building is a prototype—our crash-test dummies are the previous client.

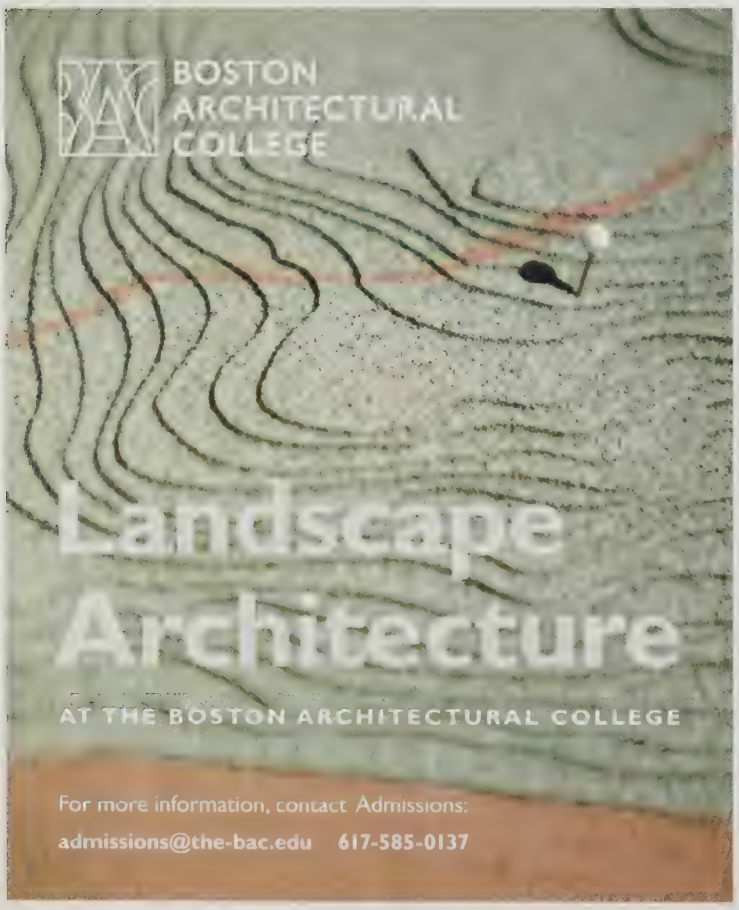
Lisa Ann Pasquale is an environmental specialist in London where she works as a building performance evaluator for Oxford Brookes University and as sustainable design development manager for Architype Ltd. She received her BArch from Rensselaer Polytechnic Institute and an MSc in sustainable environmental design from the Architectural Association.

OPPOSITE
Photo: Steve Hathaway

BPE can also serve to test theoretical assumptions and calculations. For example, field tests that measure the heat flux and thermal conductivity through walls have shown variations ranging from roughly 5 percent to 20 percent of theoretical values, with certain constructions and fabrication techniques consistently more reliable than others. This empirical knowledge of inherent variations is applied in Scandinavia, where designers adjust the theoretical thermal conductivity values of construction assemblies twice in design calculations to give more realistic predictions of completed performance. They factor in one variable to account for uncertainties in the properties and dimensions of building materials and the resulting inconsistencies in craftsmanship, and another to adjust for the effect the assembly complexity has on its performance. This prevents them from assuming that an overly complex construction that is difficult to implement on site is more thermally effective than it's likely to be.

Although construction-phase monitoring can improve quality, and scientific assessments can evaluate technical assumptions, they are still not enough to ensure that performance expectations are met. In 2009, the Usable Buildings Trust and Building Services Research and Information Association (BSRIA), both based in the UK, launched the "Soft Landings" framework to respond to the need for immediate feedback and increased user support as well as to provide the opportunity for more extensive assessments. Studies had found that buildings weren't used as designers envisaged, often because of misunderstood design intentions, poorly executed design features, and inadequate user training, sometimes with drastic effects on energy use and performance. Soft Landings is intended to increase the intensity of designer engagement both before and after initial occupancy. A residency period during the first weeks of occupation gives the design team a structured time period in which to carry out quality assessments that must be done while the building is operational, to support and advise the client and users, and to learn from working in their own building. The process is akin to "sea trials" in naval architecture, where a boat's design and robustness is tested in real-life scenarios as part of the commissioning process. In practical terms, Soft Landings aids in risk management by using BPE methods to anticipate problems.

But perhaps the greatest value of Soft Landings is its potential to boost the quality and rigor of the research that is key to ensuring relevant lessons are extracted and that the root causes of problems are addressed appropriately in future projects. The whys are always



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more important than the whats. For example, data collected on a new primary school as part of a two-year joint BPE research project between Architype Ltd. and Oxford Brookes University showed a spike in gas use over the summer break. The detailed nature of the data-collection methods allowed researchers to identify exactly the weeks in which the boilers were burning, which led them to the cause: When the boilers were serviced just before the summer break, the mechanic overrode the automatic controls to check his work but never re-engaged them when he left, leaving the boilers running all summer. The findings led to specific recommendations to the client for improved management and modifications to the designer's own client-handoff process (a more formal, extended process in the UK than it is in the US), to reduce the likelihood of similar problems on future projects.

The temptation is to sanitize findings such as this and to give a figure for the buildings' potential performance without operational slip-ups—a temptation that should be resisted. The X-factor effect of the occupants' presence is as important as the quality of the building's design and construction. Designers must accept that their buildings are rarely used as they anticipate, however frustrating that may be. The haze of unrealistic expectations will dissipate with comprehensive knowledge of how buildings are used and also lead to more robust assumptions in design phases, better expectation management, more realistic predictions of performance, and reasonable expectations of occupants. The all-too-human tendency to overpromise and underdeliver is not one that the profession will survive in a competitive environment. But firms that see opportunity in these techniques can develop more comprehensive services for clients who understand the difference between assuring and ensuring performance.

Although BPE is a science, it's not an exact science. Sometimes spurious data is recorded (such as when schoolchildren make a game of breathing on a CO_2 sensor to make the count on the digital readout go up and down), and sometimes the answers from scientific analysis are ambiguous, with no clear resolution. Not all problems have simple solutions; scientific answers can be more baffling than the questions. However, every question has a means of investigation, and although the complexity of buildings in operation can be overwhelming, ignorance should not be the accepted default. The scientific evaluation of building performance is the only way for our industry to move forward and meet the expectations of the societies we serve. ■

FOR MORE INFORMATION







Things
WE DON'T KNOW WE DON'T KNOW

We all rely on shortcuts:
rules of thumb, accepted convention,
common knowledge.
WHAT IF THEY'RE WRONG?

BY KIEL MOE AIA

"WE MUST HAVE A BODY." —*Gilles Deleuze*

"WE DO NOT EVEN KNOW WHAT A BODY CAN DO." —*Baruch Spinoza*

Architects must have buildings, but we do not even know what buildings can do. Like the at-once utter familiarity and utter strangeness of our own bodies, we know little of how buildings actually perform and behave. This is perhaps best illustrated by too many recent LEED Platinum–certified buildings that are documented to perform worse than baseline code buildings.

The recent renewed focus on building science and building performance in the discipline and practice of architecture is therefore very welcome (especially after a period defined by the theatrics of quarreling styles). In the context of increasing demand for diminishing resources, this turn in attention promises fundamental transformations for architecture in the coming decades. Given the paucity of knowledge about the actual performance of buildings, it may seem that the value of embracing building-science research would be the introduction of more certitude into design practice. But the greater value, and greater need, is the introduction of *doubt*. Currently, there may be no more efficacious way to increase both the rigor and the vigor of the profession.

The more one learns about building science, the more one begins to question central assumptions—assumptions that are as widely taught as they are pervasively practiced. The logics of air conditioning, multilayered wall assemblies, and R-values, for example, become more dubious the more one thinks deeply and systemically about bodies, building performance, and global resources. Study of the assumptions at the beginnings of air-conditioning science reveals compelling insights and oversights: Willis Havilland Carrier brilliantly ignored the role of radiant heat transfer in his calculations (even though that is the body's primary mode of heat transfer) because he was solving a problem for hygroscopic machines and, later, designing a new industry; he was not designing for the comfort of humans or the performance of buildings. Likewise, the flawed concept of R-values also ignores multiple forms of heat transfer such as the important but neglected role of thermal diffusivity for more massive materials or the role of convective flows in insulating materials such as batt insulation, which undermines their capacity to resist heat flow. In short, the more an architect thinks about the relationship between our physiology and the science of heat transfer, to consider only one example, the more apparent the fact that many platitudes of contemporary construction are based not on sound science but instead on a broad network of sometimes unwarranted suppositions and habits. If the discipline of architecture is to become more deliberate, more effective, and therefore more respected, architects will need to develop a habit of questioning assumptions: They cannot acquiesce to conventions and customs any more than they can capitulate to the rhetorical escalations of "new" techniques and technologies.

Exposing the flaws

Questioning assumptions is key to any effort to advance the integration of building science with building design. Too often, cutting-edge, if not glib, techniques are seen as driving revolutions in architecture—a worn-out trope borrowed from early Modernism, when new materials and technologies promised new architectures. However, as German philosopher Peter Sloterdijk has suggested, history has not been a process of revolutionary modernization. Instead, as Sloterdijk has written, it has been about a process of "explication," which he defines as "the revealing inclusion of latencies and background data in manifest operations." In other words, real progress is most often made by reconsidering what we think we know and re-examining the layers of presumed fact, supposed truth, and accepted practice. Any substantive, meaningful shifts in the practice of architecture in the coming decades will likely emerge from a similar process: the overt explication of prior practices.

Kiel Moe AIA is assistant professor of architectural technologies at the Harvard Graduate School of Design. A 2010 Fellow of the American Academy in Rome, he is the author of *Integrated Design in Contemporary Architecture* (2008) and *Thermally Active Surfaces in Architecture* (2010), both from Princeton Architectural Press.

OPPOSITE
Detail, the Babbage Difference Engine No. 2, designed in 1821 by Charles Babbage (1791–1871), first built, 2002. The "father of the computer" designed this mechanical calculator in response to his frustration with errors in the printed numerical tables used by scientists, engineers, navigators, and businesspeople, who unwittingly introduced and compounded errors resulting from hand calculation and typesetting. Collection, Museum of Computer History, Mountain View, California. Photo: Johan Mathe

What might such shifts look like? I can offer a couple of suggestive examples from my own recent work. Based on research that questions the assumptions and practices of 20th-century architecture, my work has focused on three topics that suggest three new modes for building design. First is the role of thermally active surfaces in architecture as an alternative to air conditioning; this paradigm finally activates the corpus of the body and the building in the same thermodynamic space. Second is an examination of lower-technology, higher-performance design rather than the planned obsolescence of higher-technology, lower-performance approaches of recent decades; this is a mongrel paradigm of durability, adaptability, and resilience that leverages the intelligence of both archaic and contemporary techniques. The third is based on an overt recognition of Einstein's observation that matter is but captured energy. Energy and material systems have been taught, designed, and engineered as disparate entities—a thoroughly false division that chronically handicaps architects. An alternative, integrated paradigm conflates energy and matter, thereby drawing attention to new hybrid approaches to building materials and systems.

"THERE ARE THINGS WE DON'T KNOW WE DON'T KNOW." —*Donald Rumsfeld*

Knowing what we don't know

Even now, as we are beginning to better understand building performance and behaviors, buildings are becoming increasingly obscure. For example, we know slightly more, perhaps, about the performance of certain building assemblies, but the geography and ecology of the materials that constitute those assemblies are largely as indeterminate as ever. This is a disconcerting split in knowledge.

Moreover, the reliability of new research is not guaranteed. New knowledge about building performance is often based on energy modeling and simulation, which give the appearance of accuracy and objectivity. But nearly all numerical models of reality are as incomplete as they are inaccurate. Further, they typically serve to answer only small questions in architecture. Numerical models are equally remarkable for what they tell us and what they conceal about building performance. (This is especially true for weak simulation programs such as Ecotect that are attractive

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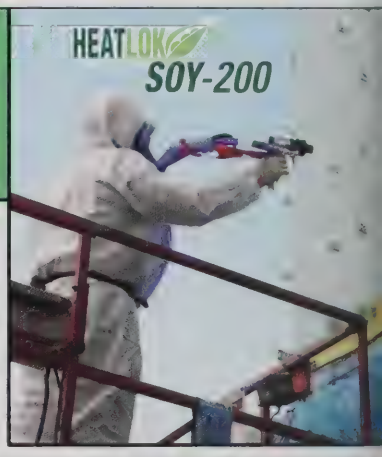
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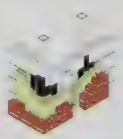
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because of their easy, graphic interface.) Numerical models do not verify the actual performance of a building or building assembly; instead, they verify performance measured against the assumptions embedded in the parameters of the model itself. What current digital models ignore is as important as what they analyze; their output cannot be any better than their inputs. The words of philosopher George Grant apply to the current interest in building simulation: "We can hold in our minds the enormous benefits of a technological society, but we cannot so easily hold the ways it may have deprived us, because technique is ourselves."

Admittedly, recognizing the failings of this technological and computational determinism can lead to despair: How can we make any progress in the face of so many unknowns? The answer lies in a perhaps unexpected realm: judgment. Judgment itself is a profoundly sophisticated and integrating algorithm, a robust method of modeling and simulation. In a period of increased interest in science and technology in design, judgment prevents us from descending into pure technique, from becoming pure technique ourselves. As such, science and technology in architecture should always remain a subset of judgment. Despite the availability of increasingly sophisticated simulation techniques, the most refined processor and algorithm in architecture remains the integrating capacity of the mind, and the most subtle thermodynamic and physiological processor remains the body. This is what can make architecture so rich, and maintaining this hierarchy is necessary if we are to integrate design with life rather than subjugate life to mere technique.

The most consequential aspects of any science experiment are, first, the examination of the assumptions that condition the experiment and, second, the evaluation of the results of the experiment—in short, the application of explication and judgment. The practice of architecture—that which will determine the future of the profession—must always be in this sense an experimental practice, one that applies extensive explication and robust judgment to the integration of science and design. Only then we will begin to know those things we don't know we don't know. ■

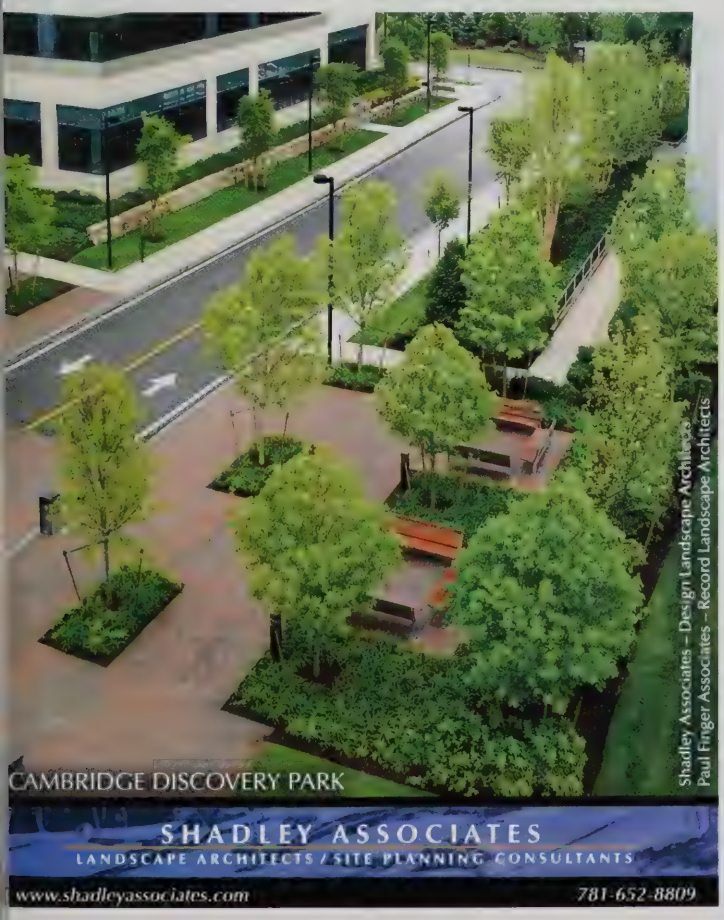
FOR MORE READING

"Good-bye, Willis Carrier" by D. Michelle Addington in *Proceedings of the 85th ACSA Annual Meeting and Technology Conference.*

"Energy Performance of LEED for New Construction Buildings: Final Report" by Cathy Turner and Mark Frankel in *New Buildings Institute*, March 4, 2008.

"Thermal Metrics for High Performance Enclosure Walls: The Limitations of R-Value" by John Straube in *Research Report 0901*, Building Science Press (2007).

Thermally Active Surfaces in Architecture by Kiel Moe AIA, Princeton Architectural Press (2010).



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Two Views on

Forget beakers and Bunsen burners. Architects can learn from the way scientists *think*.

Tyrone Yang AIA, PhD

Tyrone Yang AIA, PhD received a doctorate in perceptual psychology before pursuing a career in architecture. He has taught seminars at Wentworth Institute of Technology on human factors and architecture, and currently works as a researcher with the Living Labs and Changing Places groups at MIT.

If architects behaved more like scientists, perhaps architects would systematically observe and measure how buildings are performing. Experiments and studies would adjudicate disagreeing ideas. Articles would be written about buildings not just when they are shiny and new, but years later, when they have been used and tested by people. But architects are not scientists. Their primary goals differ (creating unique, memorable places versus discovering general laws about the world), as do the demands of their professions. Nevertheless, some of the practices from the field of science could be useful in architecture.

For instance, the scientific method could address architectural questions. Good scientific hypotheses make predictions. Data are collected to evaluate these hypotheses, which, if consistent with the data, are promoted to theories and sometimes laws that help organize our broader understanding of a topic. Schooled in this method, practitioners, not just researchers, would know how to evaluate questions and assumptions, such as whether student performance in schools might improve with better daylighting or whether thermal comfort is higher in naturally ventilated or in mechanically conditioned buildings. Architects could rigorously investigate the causal mechanisms that explain phenomena that they observe in practice; the answers to such questions could influence health, comfort, and energy use in buildings. Where controlled experiments are not possible in the real world, scientific thinking could still guide critical reasoning: When the USGBC posts the claim on its website that people are healthier and more productive in green buildings—which may indeed be true—architects would note that cause and effect is often complicated in such correlational studies.

Architects could also learn from the methodologies that science has developed to manage knowledge. Architects typically employ a *personalization* model of knowledge management, in which knowledge resides in various experts, such as the consultants on a project team. Science has a more established system for *codification* of knowledge, organizing it into journals, verifying new findings through formal peer review, incorporating previous studies by accepted citation methods, and producing review articles on a regular basis to synthesize knowledge in a particular area. Applied to architecture, such a system could replace the informal amalgamation of reports, client feedback, and anecdotal evidence that substitutes for a knowledge base in most firms. Better codification would aggregate information from a variety of firms and projects and advance architectural knowledge in a broader manner.

Although these practices have already been implemented by building-science researchers, they are not typically integrated with routine architectural design practice. Compared with other areas of science, research in architecture faces particular challenges, such as client privacy, liability, and a lack of funding for even the most basic investigations, such as building performance evaluations.

In the future, enabling science to benefit architectural design may require a multipronged effort. Most important, clients, the public, and the government need to understand the value of creating better-performing buildings and the utility of science as a means of achieving this goal. Funding—from the industry, government, and clients—would create better cross-talk between practice and academic research. We might see new collaborations with specialist consultants—not only engineers but also building scientists and human-factors researchers. Perhaps new technologies like those for ubiquitous sensing, now under development at the MIT Media Lab, could automate data collection or create more responsive buildings. The way to advance the profession is to advance its knowledge, and that will come only with a change in the profession's intellectual ecosystem. ■



Two Cultures

Nevin M. Summers AIA

Scientists are discoverers, driven by curiosity. Their discipline is not a belief system but a knowledge system that uses reason, observation, and empirical finding to separate causation from correlation and to unify and explain otherwise disparate, unfathomable phenomena. Science thrives on unexplained facts that challenge the validity of current theories that are shown to be incomplete by their lack of universality.

Perhaps the best way to understand how scientists differ from architects is to look at the ways they create, disseminate, and use knowledge.

Much like the most collaborative of architectural practices, science is a community effort. Although there's intense competition to discover and publish first, the intellectual enterprise thrives on collegiality and shared knowledge. Academic labs are run as knowledge studios supervised by professors.

Unlike architects, however, these professors are also part of a larger economic ecosystem: They are encouraged by federal grants to found startups under "tech transfer" policies that maximize commercial value to society but minimize conflict-of-interest. (The entrepreneurial biotechnology industry originated this way.) Although a scientific discovery per se cannot be patented, a method, machine, or composition of matter that employs such a discovery in a novel, unobvious, and useful way can; this is the work of engineers, who apply scientific principles to make the products demanded by society. Science is thus the driver of the modern economy and is therefore closely aligned with the national agenda, benefiting greatly from federal funding.

Where scientists strive for simplicity and universality, architects pursue fitness within the context of place, purpose, and culture; the unique, the custom, and the individual predominate. Architects are integrators charged with achieving a synthesis of many disparate factors; their work is much more complex and multifactorial.

Neither science nor architecture, however, is immune from the simple fact that, left alone, any discipline will develop a proprietary culture that seeks to restrict the flow of knowledge for private gain. Research on problems that adversely affect all players consequently goes unattended, despite the fact that knowledge is built as a shared enterprise "standing on the shoulders of giants," as Vitruvius and Newton both noted.

Knowledge is a wasting asset. Like money, it diminishes in value over time unless it is invested and its growth is allowed to compound exponentially. An unfortunate systemwide inefficiency of private (Western) capitalism is that competing firms, which must keep their work secret to preserve patentability, create a massive wasteful duplication of effort. In industry, even failed scientific experiments are sequestered for fear others may use that knowledge for benefit; the architectural analogue is sealed settlement agreements regarding building failures. Entire industries can stagnate from a hyperproprietary culture, as in the case of pharmaceuticals today, where innovation has stalled despite vast sums of aggregate (but uncoordinated) spending on research and development.

Darwin showed that competition is necessary to allocate resources and to propagate the fittest, most adaptive individuals. But competition alone is insufficient. There must also be cooperation to satisfy the evolutionary tendency toward increasing complexity. Without collaboration among disciplines, we will not develop the knowledge we need to become better stewards of the global environment—the greatest issue facing society today. Environmental challenges such as climate change do not respect professional boundaries; they mock them. ■

Nevin M. Summers AIA is president of Novation in Cambridge, Massachusetts, a life-sciences consulting firm, and former director of corporate development for the Biomedical Enterprise Program in the Harvard-MIT Division of Health Sciences and Technology. He holds degrees in molecular biology, architecture, and management of technology.

ABOVE
Detail, glass model of a radiolarian (a marine protozoan) created in the late 19th century by Leopold and Rudolf Blaschka. Collection, Smithsonian Museum of Natural History. Photo: Victoria Pickering

Sometimes a beautiful photograph is not a pretty picture.

Photographs and text by David Arnold

On a rainy April morning in 2005, I was driving home with a newly purchased Bradford Washburn photograph propped against the passenger window.

It was an aerial picture of a glacier, one of thousands taken by the former president of the Museum of Science (who died in 2007). Sneaking peeks at the photograph, I wondered: If the hullabaloo about planet warming is true, has this scene changed?

The question resulted in an exhibition of historic and contemporary photographs of glaciers, now touring the country, and a new project in the works using a similar methodology: I am shooting corals, using benchmarks from other photographers to create comparisons by replicating the camera angles and conditions in the earlier pictures.

The news is not good. The ice world is melting fast. And about 40 percent of the planet's reefs are in decay: Coral death is complicated, but human fingerprints are all over it. Humans are to blame, and humans are the solution. Says who? Says 98 percent of the peer-reviewed climate research and every significant national science academy. Our dependence on fossil fuels with their byproduct of carbon dioxide is thickening a heat-trapping invisible quilt around the earth.

Frankly, science has never been my strong suit. I took "Physics for Poets" to fulfill my college requirement. But looking through a lens at the pace of change today has forced me to ask questions and judge motives of the deniers because, although I have not become a scientist, I have become more science literate.

The research put through the acid bath of peer reviews says that if we don't smarten up fast, a dangerously warmer planet ensues. We don't want this, particularly on our watch. The consequences are unfathomable—not to mention the guilt.

So the skittish among us start concocting narratives to address the very understandable anxiety. Those narratives offer hope, albeit spurious: We hope that the science is faked; climatologists are in it for the money; Gore is just a griping presidential loser; we are in a natural warming cycle; we are in a natural cooling cycle; we can legislate against the laws of physics and chemistry; the problem is not coal and oil but water vapor and cow farts; we can throw sulfuric pixie dust into the atmosphere and all will be well. Adding more science may only increase the anxiety and the need to cling to narratives.

The rub is that science is a discipline. It thrives on transparent peer-chewed data. Evidence, not opinion, makes good science.

The good news is that, just as these photographs speak to unsettling change, they speak to nature's plasticity. We have the technology to reverse our course. The science says that if we get off a fossil-fuel diet, the monster will retreat. It's physics for poets.

David Arnold

photographer and journalist who was a staff reporter at *The Boston Globe* for 25 years. For more information on his project, Double Exposure: Photographing Environmental Change, visit: www.doublexposure.net.

Top right: Guyot Glacier, 1938
© Bradford Washburn, courtesy archives, University of Alaska.
Bottom right: Guyot Glacier, 2006
© David Arnold.

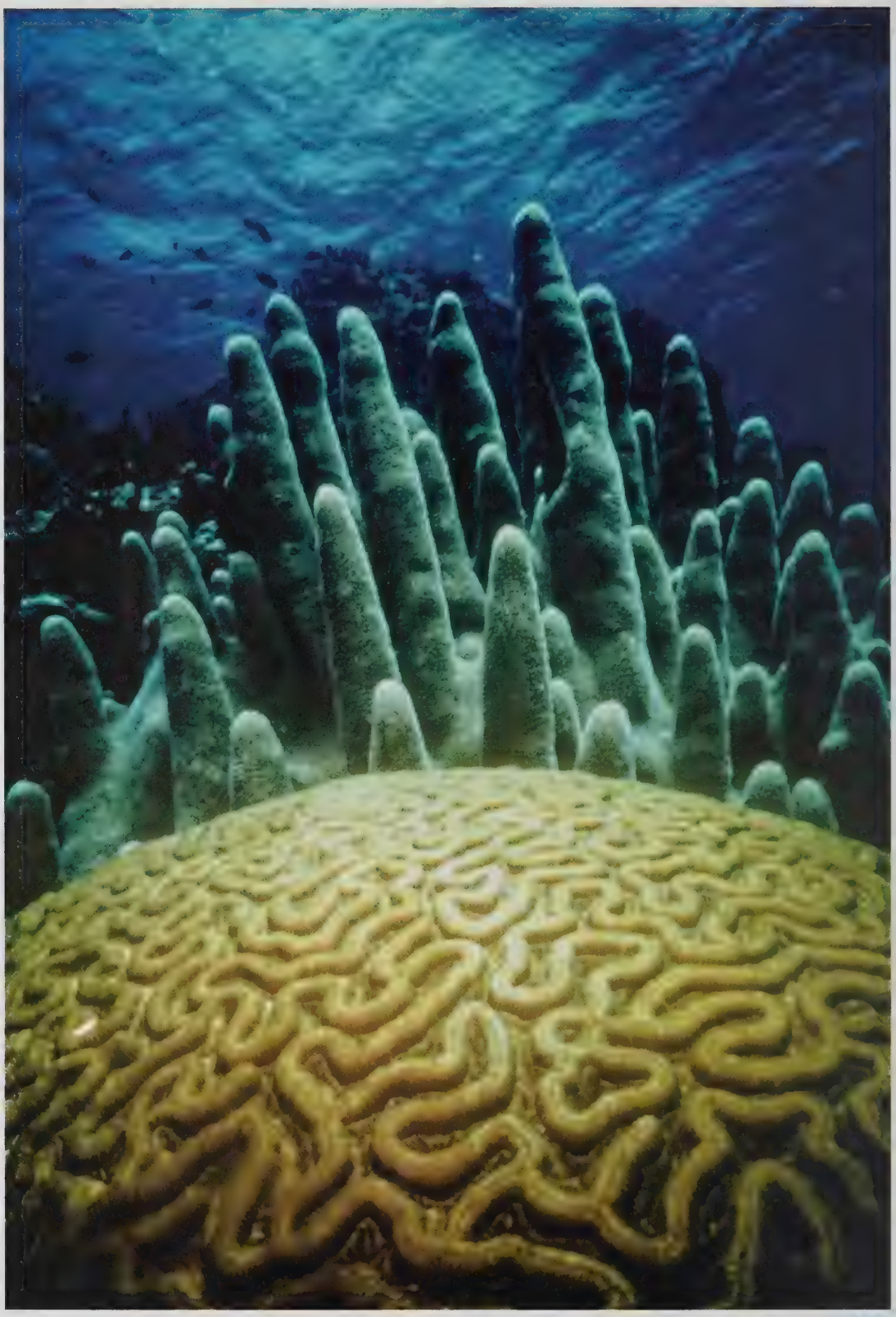
The glacier, located in southeast Alaska, has receded 12 miles up the bay. (The white in the foreground of the image is fog.) Enough fresh water has melted from the Guyot during the past 70 years to supply all of New York City's water needs for 47 years. The state of Connecticut would fit in this scene with room to spare.

1938





2006



1989



2011

Opposite: Brain Coral, Rhone Reef, British Virgin Islands, 2011. © Amanda Jones

Left: Brain Coral, Rhone Reef, British Virgin Islands, 2011. © David Jones

Major changes in the challenge to accept Sue Thompson [illegible] professional [illegible] taking the best photographs of this site, has logged more than 600 dives and [illegible] hours of time [illegible] year underwater in the British Virgin Islands. I would not have believed the [illegible] place, she said. But I've not seen it [illegible] happen [illegible]

1938





2006

Top:

Bottom:

2005





2011

Top: Jewels of the Florida Bottom Virgin Islands, 2005, © Jim Sanders

Bottom: Views of the Florida Straits Virgin Islands, 2011, © David Arnold

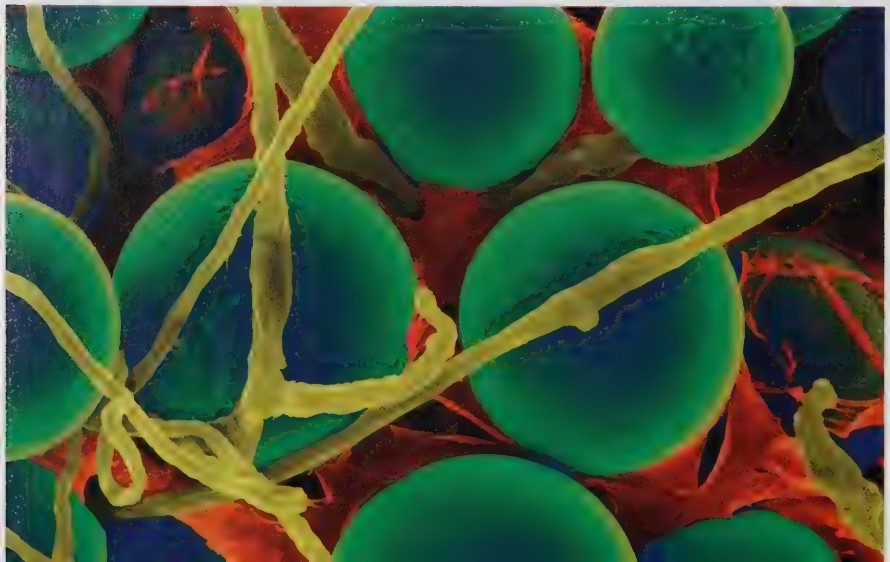
During the Summer of 2005, much of the Caribbean was reeling from unprecedented coral bleaching and die-offs. Deprived of algae that lives on their tissues, the reef-building corals [illegible] Commercial fishing, as well as tourism, will suffer until the ecosystem can recover, [illegible] more vibrantly today.

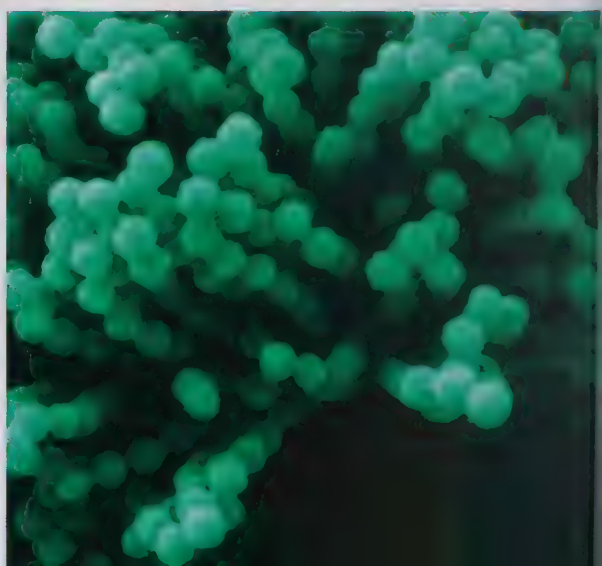






If Walls Could Talk:
The Science of Building





Jason Forney: In the days when the architect was the master builder, science was an integral part of building design; but in the latter half of the 20th century, architects lost that connection. Through writing, teaching, consulting, design, and an extensive website, your firm, Building Science Corporation, is largely responsible for reacquainting a new wave of architects, builders, and clients with science. Why have you committed yourselves to that endeavor, and why do you think people are listening now?

Betsy Pettit: I was concerned that the architecture profession was giving up a lot of its work to other types of consultants. Architecture is really a combination of art and science, and we architects need to understand how things work in order to come up with an aesthetic that is meaningful for sustainable, energy-efficient, durable projects.

Jason Forney: You define building science as "the study of the interaction between the various materials, products, and systems used in building construction, the occupants of these buildings, and the environments in which they are located." A lot of people would assume that's a definition of architecture—or that it used to be. So what happened?

If walls could talk, there would be a whole lot of moaning, groaning, and general kvetching.

Betsy Pettit FAIA and Joseph Lstiburek PhD, P.Eng talk with Jason Forney AIA

Joseph Lstiburek: I think the problem started when architects came to view themselves more as artists and lost their familiarity with all aspects of construction. I'm appalled in some cases at how architects practice. How can you possibly be an architect and not know the technical side, the physics side, of construction? There should be no place for firms such as ours. If architects do their job, there is no need for another consultant to do the stuff that architects used to do as part of their day-to-day practice because they knew how buildings worked and they knew their materials. Now architecture is mostly art. I love art, but you don't leave your artwork outside in the rain.

Jason Forney: There is a stereotype that beautiful buildings leak, and efficient, technically well-conceived buildings are ugly. But there's no reason that needs to be true.

Joseph Lstiburek: You can't possibly have good architecture without beauty. As an engineer, I approach the problem a little differently. I say the only way buildings are going to last a long time is if people take care of them. The only way that people are going to take care of buildings is if they want to take care of them. And people don't take care of ugly things; ugliness is not sustainable.

Jason Forney: Sustainability has, in fact, drawn a lot of attention back to building-science issues. What are the overlaps between building science and green building?

Betsy Pettit: A building that's sustainable is one that is durable, that people can live or work in comfortably, that doesn't require a lot of intervention to achieve good indoor air quality. And, serendipitously, the things that provide durability, comfort, and good indoor air quality happen to be the things that promote better energy efficiency. That is really where green building and sustainable building should be going. The science helps us get there.

Joseph Lstiburek: I view green as a passing fad. I'll be happy when it's over with and we can get back to following the rules of physics and doing architecture in the truest sense: beautiful buildings that stand the test of time, that are structurally sound and therefore safe, that don't make people sick, that are comfortable and durable. Why do you need a special label certifying that you did what you were supposed to do? Why do architects need to join a special club with an arbitrary and capricious checklist and a secret handshake? I'd be insulted if somebody told me that I had to follow this checklist. That's why I became a professional. Are we not professionals anymore?

Jason Forney: We're seeing significant revisions to building codes in response to concerns about sustainability and energy consumption. Do you think codes can drive change?

Joseph Lstiburek: Codes have long ceased to be a means of preventing disasters. They've become instruments of social change and government policy. I don't have a problem with social change and government policy; I have a real issue with building codes as the vehicle for achieving that.

Betsy Pettit FAIA is a principal of Building Science Corporation (BSC) in Somerville, Massachusetts.

Joseph Lstiburek PhD, P.Eng is the founding principal of BSC and an ASHRAE Fellow. He is the author of several books, including the *Builder's Guide* series.

Jason Forney AIA, LEED AP is a senior associate at Bruner/Cott & Associates in Cambridge, Massachusetts.

OPPOSITE
Common molds found in residential construction. Photo series by Dennis Kunkel, 2004–2008. © Dennis Kunkel Microscopy, Inc. For an online slideshow: www.architectureboston.com

Jason Forney: Can you give a specific example?

Joseph Lstiburek: The thermal-resistance requirements for the building enclosure—we're now being told what glazing ratios to use. So homeowners who want lots of windows for views and daylight and transparency are forced to build a very different sort of structure, because someone has decided that limiting windows is the prescribed route to lower energy consumption. The codes are consensus documents, but consensus from whom? They are subject to unbelievable lobbying—the process is subject to tremendous political interference. I think people would be appalled at what codes have turned into if they knew how bad the process is. Having said that, I don't have an alternative.

Jason Forney: What would your code look like if you were in charge?

Joseph Lstiburek: My code would be one sentence: Don't do stupid things. But the entrenched reality is that codes are political documents. It took me 15 years to get the vapor-barrier provisions changed because of all the politics. Politics in a vapor-barrier discussion? Well, sure: If the code requires a vapor barrier, then you have created a market for a certain set of products that must be used. If the code doesn't require it, then the market expands to a different set of products. Somebody makes money, somebody loses money.

> Houses in general haven't saved energy, because the houses have gotten bigger. So we have all of these wonderful improvements in technology and efficiency, but we've managed to find some way to squander every one of them.
>
> *—Joseph Lstiburek PhD, P.Eng*

Betsy Pettit: And we haven't even mentioned the legal aspects of buildings that had polyethylene vapor barriers. We live in a litigious society. If Building Science Corporation says not only that you do not need poly vapor barriers but also that they can create problems, have we cleared the way for a whole new category of lawsuits? And what does that mean for the profession's ability to expand its body of knowledge? We should be able to live and learn and evolve. Some experiments are failures, but they help us to learn more about the way things work.

So we have to be very careful about the experiments we make. And frankly, it makes doing research in architecture very difficult. Who pays for it and how? We've been lucky to be part of the Building America program, a research program established by the US Department of Energy to promote more energy-efficient housing. Unlike almost every other industry in the country, the building industry, generally speaking, does not invest in research.

Jason Forney: What sort of directive did you receive from Building America?

Joseph Lstiburek: In the early days of the program, the government said, in effect, that things aren't working and we're not sure why; go and figure something out. It was as general as that. We said, let's focus on the failures, which are very expensive, and try to solve them in an energy-efficient way. In other words, try to get a two-for-one. And if the mechanism of solving the problem doesn't in itself save energy, maybe we can at least save money that we can deploy somewhere else in the project to promote efficiency.

Jason Forney: That's an interesting way to think about a project—in terms of redistributing savings to rearrange the budget.

Joseph Lstiburek: Only an architect can connect the dots in that way. This is important. Think for a moment about the perspective of typical homebuilders. How do they figure out how large a heating or cooling system a house needs? They ask a mechanical contractor to size the system. Mechanical contractors have absolutely no incentive to make the system smaller. They make money based on the number of tons of installed cooling capacity. So there's no reason for a mechanical contractor to say, "You know, if you use better windows and maybe make them a little smaller and move them from here to there, I can save you two tons. So maybe you spend $2,000 more on windows to save $3,000, but you're still $1,000 ahead."

Incentives get even more skewed when you talk about construction at the scale of the production homebuilders. One of the legends in the homebuilding industry is Bill Pulte; his company is one of the largest homebuilders in the US. He explained it to me pretty clearly: the science and physics of building is a complete distraction. In fact, constructing a house is completely incidental to their real business, which is pushing the property and financing package. It's all about impressing Wall Street.

The only solution lies with architects. But now we have a gazillion consultants because the architecture profession today doesn't have enough generalist

knowledge to ride herd on everybody. Architects need to be more in control. They need to know enough so they can push back when a mechanical engineer or a structural engineer gives them colossally stupid advice. That probably sounds surprising, coming from an engineer. But I want architects to have more knowledge and more power. They don't have to know everything, but they need to be good general practitioners.

Jason Forney: Some residential architects are headed in that direction, optimizing energy performance with the Passive House standard and the net-zero-energy concept.

Joseph Lstiburek: If you want to have an R50 slab insulation, I think that's fabulous. If you want to have an air-tightness requirement of .6 air changes per hour at 50 pascals, knock yourself out. But when you run around saying anything less than R50 and .6 is dumb, I get irritated. There is a difference between private standards and labeling, which can be helpful, and mandates. I believe that certain decisions and tradeoffs should be left to the client and the architect. Of course there should be an energy code, but its requirements should make sense. The code shouldn't push beyond technology's ability to respond, which is what's happening now. We don't yet have the industrywide delivery mechanism to achieve some of these targets on a large scale.

Jason Forney: Do you think there'll be a point in time when that changes? When either the cheap oil era has really ended, or energy costs increase so dramatically that changes are forced on us?

Joseph Lstiburek: In fact, on a square-foot basis, houses in the United States and Canada have improved dramatically in the last 30 years. But houses in general haven't saved energy, because the houses have gotten bigger. So we have all of these wonderful improvements in technology and efficiency, but we've managed to find some way to squander every one of them. We now have efficient heating, cooling, windows, and enclosures, and I suspect house sizes have maxed out. So how come we're still using so much energy? Well, have you ever looked at what we put into a house? The televisions, the computers—all of the consumer stuff that's plugged in and never turned off. Betsy just worked on a house where the miscellaneous electrical loads are larger than either the hot-water load or the space-heating load.

Betsy Pettit: It was a house with three boys, who are all into gaming and technology. But at some larger level, these are moral questions that people need to struggle with individually. It's not the job of the architect to impose the answers. But we can build holistically and efficiently, and help people make smart tradeoffs.

> We should be able to live and learn and evolve. Some experiments are failures, but they help us to learn more about the way things work.
>
> —*Betsy Pettit FAIA*

Jason Forney: In the introduction to your *Builder's Guide* series, you talk about the loss of knowledge and the reliance on following convention, when people don't understand why or how the methods that they're using work. Sometimes the science exists, yet it's still ignored. That's a lot of inertia to overcome.

Joseph Lstiburek: We don't teach fundamentals in school anymore, so people seem to be incapable of sorting through the nonsense.

Jason Forney: Betsy, a lot of your recent work involves transforming homes through deep energy retrofits. But there are millions of existing homes. It's a huge challenge just to know how to begin to evaluate them.

Betsy Pettit: And we don't have the total answer. It's much easier to figure out a way to build new buildings after learning from the forensics why things fail. But the problem of existing buildings is that each one is a research project in itself; none of them are the same. We are working with National Grid and the Commonwealth of Massachusetts on the Deep Energy Retrofit pilot program; they really want these retrofits to be affordable, and they want to be able to implement them by component. Right now, we're not comfortable with not understanding the whole house. We believe that a plan needs to be made for the whole building before we can think about ways to implement it incrementally.

So we have a demonstration project with whole houses. We're hoping that we'll learn from that process how to do it less expensively and how to make a kit of parts that will give homeowners some options: Here's how to waterproof and insulate your basement. Here's what you can do to your attic. Here are ways you can change your windows. These techniques can be applied to larger buildings, too,

FOR MORE INFORMATION

Building Science Corporation: www.buildingscience.com

National Grid Deep Energy Retrofit program: www.powerofaction.com/der

Building America: www1.eere.energy.gov/buildings/building_america

Insulating Masonry Buildings: www.buildingscience.com/documents/insights/bsi-047-thick-as-brick?topic=doctypes/insights

Builder's Guide to Cold Climates, by Joseph Lstiburek, Building Science Press, 2006. Available from www.buildingsciencepress.com; other climate zones available in the series.

although those projects tend to have consultant teams. Houses are the bigger problem.

Jason Forney: Historic buildings present another set of challenges. How far should we be pushing changes in appearance to historic buildings for the sake of increased efficiency?

Betsy Pettit: One of the most controversial issues in historic structures is windows. Old window technology is terrible compared with new windows. The argument is over aesthetics; I don't believe that the difference is huge but, obviously, some people do.

Joseph Lstiburek: It's a political, moral, and philosophical judgment. I can put windows back into a building that are exactly what I took out, without improving them. Or I can install windows that are significantly technologically superior that look very similar. I understand the arguments for the old windows, and I know the new ones aren't the same. But what are we trying to accomplish here? Especially when taxpayers' money is involved through tax credits. I think it's appalling that taxpayers' money is being used to subsidize energy inefficiency.

Betsy Pettit: And sometimes decisions are made on the basis of outdated or incorrect information. Our office is in the Somerville Historic District, so we needed permission to change the windows. We knew they would be wood; we wanted low-E glass, which was not allowed because early low-E had a purple tint. That's not an issue anymore. I had to bring in sample sashes to convince them, and we ultimately got permission.

Jason Forney: Another controversy in this region is insulating masonry buildings. Why are so many architects afraid to add insulation to the inside of masonry walls?

Betsy Pettit: We've told people that you could potentially change the way the brick sheds moisture, and you could ruin your brick. So there should be some fear about that. But we've got mill buildings all over New England. Probably every architect in the region has at some point turned a mill building into housing of some sort. Why in the world would we think that it's not OK to insulate the brick wall?

Joseph Lstiburek: It's irrational hysteria. Yes, there is some level of risk in insulating a masonry building on

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the interior, but it's been overblown. If you control the way rainwater is handled by the surface of the building from the outside, the risk is trivial. I just did a project in Vermont, a 100-year-old masonry building. You could see the problems from the parking lot: a stain under every window and at the parapet, which meant those were the areas with water issues. I told the owners to rebuild the parapet, and then pull out the windows, pan-flash them and give them drip edges, and then put them back—because they needed the historic tax credit. So regardless of the thermal performance of the window, they could resolve the water management problem and safely insulate the interior.

What I loved about that project was the architect, who was grinning because the clients had paid to bring in the outside expert to tell them exactly what he had already been saying. This is an architect with a world of experience, and he knew what he was talking about: You keep the water out, you keep it from collecting where roofs and walls come together, and you can insulate as much as you want. Once you handle the water, everything else is secondary.

Jason Forney: Your last 30 years have been, in effect, one big research project. What are your conclusions at this point?

Betsy Pettit: Buildings are complex structures. Things happen that you can't anticipate. So I never brag about projects while they're only on paper; I like to wait until they've been built for at least a few years. What we don't do enough as architects is go back to our buildings. Of course, we don't get any money to do that, generally speaking, so it's tough. Nobody would pay for pure building-science research if we didn't have public funding. We are thankful to have the government as a client who will pay us to do the research that architects and engineers are benefiting from. We're doing our best to make that information available through our website and teaching.

Joseph Lstiburek: Thirty years ago, I thought I was a really clever guy who knew everything; now I'm an older guy who is convinced that he knows significantly less than what he thought he knew. I've discovered that ignorance truly was bliss. With the lens of experience, I know that a lot of issues are not as black and white as people like to think they are. There's a lot of gray. But I do know this: You can't substitute the judgment of the architect or the engineer with a computer simulation program and a checklist. ■

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Books

Field Notes on Science & Nature

Edited by Michael R. Canfield
Harvard University Press, 2011

The practice of taking systematic and detailed field notes enabled the rise of scientific disciplines including paleontology, evolutionary biology, and ecology. The 19th-century journals of Lewis and Clark, Darwin, and Thoreau are still read for their scientific insights and literary grace. Today, because the scientist may never get the chance to revisit a particular spot in the Sierra Nevada or Papua New Guinea, field notes are still required to document research. And in our era of environmental crisis, they provide a baseline for measuring change over time.

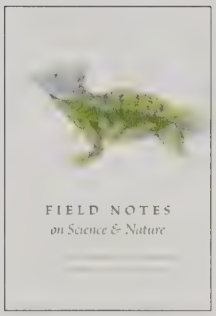
Field Notes on Science & Nature contains 12 essays by leading scientists celebrating the enduring role of the field notebook—an essential tool for all scientists who work outside the laboratory. Each essay provides a window into a different scientist's mind by describing his or her note-taking methods and the experiences that shaped those methods. We read about Kenn Kaufman's childhood bird lists, Karen Kramer's mapping of Mayan villages, and Roger Kitching's harrowing trial of carrying a researcher with a broken leg down a mountain river in Borneo.

One fascinating chapter, "Letters to the Future," by John Perrine and James Patton, describes the fieldwork of early-20th-century teams led by the pioneering ecologist Joseph Grinnell. Their notes were so detailed that scientists today can restudy the same places to show how human activities have affected California ecosystems over the past century.

Field notebooks are also seedbeds of speculation, where new lines of research and theory can germinate. Bernd Heinrich describes how his studies of animal behavior often arise from some oddity he has seen and scribbled down. "When I am in the field collecting information, I am on the outlook for the nascent, the new, and the unexpected that may spring out of the familiar."

Many scientists rely on drawings to record information and express ideas. *Field Notes* contains splendid reproductions of entire notebook pages, where sketches and diagrams alternate with text. Jonathan Kingdon, an authority on African wildlife who also trained as an artist, sees an affinity between science and art: "Learning to discriminate between what is significant and what is irrelevant … is an essential part of field studies, and just such discrimination is integral to the art of drawing."

The contributors to *Field Notes* are mostly staunch defenders of the paper notebook. But the references to photography, computer databases, and GPS mapping make one wonder about the future of field notes in the digital age. Like the architect's sketchbook, the field notebook may endure or vanish or more likely transform itself in unimaginable ways. But the need to look closely and think about what one sees will remain central to science, as it will to design.



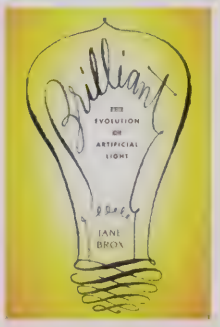
Jay Wickersham FAIA practices environmental and construction law and teaches at the Harvard Graduate School of Design.

Brilliant: The Evolution of Artificial Light

by Jane Brox
Houghton Mifflin Harcourt, 2010

When the sun is out of view, we surround ourselves with small-scale replacements—curving forms that emit light and heat. Before centralized energy distribution, our sun substitutes also conveyed the passage of time. Flames danced through each passing second, and the fuel source (tallow or beeswax, kerosene or whale oil) steadily retreated over the course of hours. The development of gaslight in the 1800s converted artificial light into a constant and separated it from responsibility, making possible a new concept: "nightlife." We build now with the expectation that there will be light whenever it is wanted, wherever we wish it.

In her absorbing book *Brilliant: The Evolution of Artificial Light*, Jane Brox narrates luminary progress starting with the light of a sandstone bowl containing a bit of moss tucked into animal fat in the hands of the earliest interior designers, the creators of elaborate cave paintings; the history extends to the OLEDs around the next corner. To describe that which describes everything without itself possessing a physical form, Brox interweaves compelling observations, sensory descriptions, and statistical data in an approach well suited to a story that parallels the blossoming of empirical science. From Baudelaire, we gain a writer's perspective of what it was like to be a pedestrian at the dawn of nightlife: "A kaleidoscope equipped with consciousness." In Thomas Edison's lab notebooks, we glimpse the rigor



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applied to the refinement of the incandescent bulb.

Houses were wired for electricity first for light, after which irons and washing machines soon followed. Personal accounts from farmwives reveal the liberation of womankind that accompanied the harnessing of electricity. "I'll tell you—of the things of my life that I will never forget, I will never forget how much my back hurt on washdays." Our ever-growing reliance on energy has placed us on a dangerous trajectory, but a return to washboard scrubbing and candlemaking is unthinkable.

Perhaps what is needed is a reassociation of light and time. At my grandparents' house in Vermont, a small red light was installed on a switchplate in the 1970s; when the light is off, demand is low and a reduced rate is charged. My grandmother, who grew up mindful of all consumption during the Depression and World War II, moderates her use of electricity according to the time of day because she has a visual reminder of the energy source.

Brox wonders "whether we are hampered more by brilliance than our ancestors ever were by the dark." It is an important question, especially for designers. Can we achieve a sense of tranquility in a world awash in artificial light? It is not just the visibility of the Milky Way that we are missing but the opportunity to reflect on the Milky Way, or the mesmerizing movement of a small flame.



Crystal Tobin Chandler AIA is an architect at Sean O'Kane AIA Architect, PC in Ridgefield, Connecticut. She received her BS in building sciences from Rensselaer Polytechnic Institute.

Architecture and the Sciences: Exchanging Metaphors
Antoine Picon, Alessandra Ponte, editors
Princeton Architectural Press, 2003

The notion of scientific metaphor in design frequently conjures images of a material expression of a familiar object in nature, such as Herzog & de Meuron's "Bird's Nest" stadium for the 2008 Beijing Olympics or Frank Lloyd Wright's treelike columns in the Johnson Wax building. The use of biological interpretations like these to shape built form can provide a symbolic significance in design. Alternatively, science can more deeply influence the methods and even the purpose of architectural endeavors. In *Architecture and the Sciences: Exchanging Metaphors*, a collection of 11 essays by historians and scholars, editors Antoine Picon and Alessandra Ponte present the relationship between science and design in terms of the quantifiable, analytical, and innovative methods used to advance each field.

The first theme addressed is the influence that natural science has had on the composition of structural form and the relationship between site and architecture. Perhaps the best-known historical example is Vitruvius's writings on spatial order governed by nature and the importance of site, discussed here by Denis Cosgrove. Vitruvius, as did subsequently the astronomer Ptolemy in his study of the cosmos, attempted to create a framework to define space through empirical measures to rationalize form. A later essay by Ponte depicts the influence of scientific advances on form and site, describing geometric craters created from nuclear testing. In this essay, nuclear development highlights both the destructive and creative capabilities of science. The physical destruction at the testing site, undeniably horrific, is also perceived by some as art—as an altered landscape form—while possibly offering a positive effect by prompting the analysis of structures that could survive a nuclear blast.

Natural sciences such as anatomy and biology also played a role in the development of architectural documentation, as the 19th-century architect Viollet-le-Duc attempted to objectify the architecture of the Middle Ages through a novel scientific approach: studying buildings as a bodily dissection. Anatomical explorations of exploded skull drawings, as well as other cranial studies, influenced architectural drawing and the art of perspective as a way to understand and define architecture. In the 20th century, anatomical and biological metaphors were replaced by metaphors from the physical sciences as, for example, crystalline structures and geometric patterns were reflected in the designs of architect Buckminster Fuller.

In the 21st century, it is digital technology that is the scientific tool most linked with design; the three-dimensional capability of the computer drawing package may serve, much like its 19th-century anatomical and biological precursors, to provide entirely new approaches to the study of buildings. But the ability to layer site data with programmatic representations, such as architect Greg Lynn's "animate design" process, allows even more: the ability to investigate multiple options and to understand the implications of design decisions. As the interconnections of architecture and science continue, we can expect to witness an accelerating evolution in methodologies for research-based design.

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The Boston ArtScience Prize
www.artscienceprize.com

Each year, more than 100 Boston high school students work after school to develop ideas that address a global problem—such as "The Future of Water"—using both analytical and aesthetic methods. Their goal? A share of the $100,000 ArtScience Prize established by Harvard scientist David Edwards, who believes successful innovation needs both art and science. Winners also participate in an "Ideas Translation Workshop" in Paris. Bonne chance!

A Day Made of Glass
www.corning.com/news_center/features/A_Day_Made_of_Glass.aspx

In this corporate-video-gone-viral, glass giant Corning offers its vision of what the not-too-distant future might look like. It's a compelling demonstration of the application of research and science to building materials, design and, well, life.

Occupant Indoor Environmental Quality Survey
www.cbe.berkeley.edu/research/survey.htm

The Center for the Built Environment at the University of California at Berkeley has developed a set of tools to help evaluate occupied buildings. Download surveys, and see for yourself how this feedback might improve your design or help your clients better manage their facilities. It may sound dull, but how often have you wanted to change the temperature at your own workplace? Exactly.

National Institute of Building Sciences
www.nibs.org

Established by Congress, the institute's mission is "to serve the Nation by supporting advances in building science and technology to improve the built environment." Essentially a constellation of specialized groups, the institute oversees programs including the Building Enclosure Councils, the Whole Building Design guide, building performance, and hazard mitigation. And that's just the beginning.

C.P. Snow's The Two Cultures
www.youtube.com/watch?v=BYEvSwViGRY

The first of a five-part lecture series at the University of Maryland, Baltimore County discusses the enduring split between science and the humanities, and the legacy of C.P. Snow's famous 1959 lecture at Cambridge, "The Two Cultures." ■

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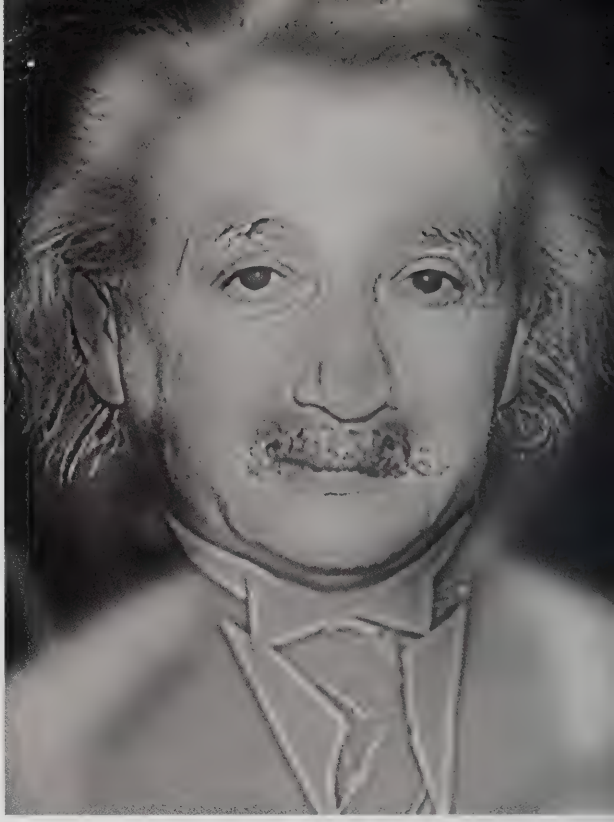
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The MIT Museum

Mark Slater has been active in the global technology and finance scene for more than two decades and now works at a Web startup in Cambridge, Massachusetts. He writes commentaries on urban life.



RIGHT
Marilyn Einstein from the "Hybrid Illusions" series by Aude Oliva, 2007. Oliva, the head of the Computational Visual Cognition Laboratory at MIT, developed this hybrid photograph (best viewed at two distances) from superimposed images of Marilyn Monroe and Albert Einstein as part of her research on visual perception and interpretation.

Context is all, and the MIT Museum, well, looks like it belongs at MIT. The core of MIT's campus, which despite recent additions, looks like a not-completely-unfortunate collision between a cargo train of Quonset huts and a hyperactive concrete factory, often feels like an aggressive celebration of the triumph of utility over form.

The museum itself, set in a collection of low-rises in the commercial ghetto between campus and Central Square, is a bunker with cramped, sideways approaches: It lies askew to the main axis of the area and hides itself away, size and shape receding behind the façade. Saying that this adds to a budding sense of excitement would be hyperbole of the worst sort: Approaching the museum has all the majesty of walking up to a poorly situated convenience store.

My visit is informed by my own context: My college physics work was notable only for the brutality I routinely and inadvertently inflicted on equations as I tried to wring answers out of them; my stint as an actual graduate student at MIT was at the business school, which the rest of the MIT student body charitably viewed at best as an alien intrusion and at worst as a home for the lesser equipped. Chip on my shoulder? No, but my baggage cart is full.

Once inside the building, you're enveloped by a cool minimalism reminiscent of a Philippe Starck hotel lobby, but at least here there's no doubt that it's an authentic statement. Unfortunately, despite the hint of a hotel lobby, there's no matching bar.

Ascend the stairs to the main gallery on the second floor, and your footsteps trigger musical notes at each tread. Yes, a sense of humor pervades the space. But are they just making light of overly serious endeavors or showing off their mastery? Humor, even when illuminating, is domination of the audience or the object. Perhaps it's a part of the self-consciousness that pervades the place, this earnest effort to connect you to the essential humanity behind the science.

A collection of small, mechanical devices deconstruct elements of nature while simultaneously exulting in their own artificial life: One is endlessly self-nourishing, lifting and pouring oil over itself, like a small Sisyphus, but with purpose; another mimics miniature flying birds constructed from small pieces of paper and metal, moving in a more stately fashion than nature itself.

Other exhibits highlight major advances in technology and scientific thought: Wiener's cybernetics, Land's Polaroid camera, Shannon's information theory, and so on. Virtually all are organized around a defining individual, with photographs of the scientists mounted with the reverence of icons: "You may know the science, but remember them."

Elsewhere, a collection of holograms, mostly of scientists, fills a room. Monuments to essential human connections, they stand as eerie memento mori. The most arresting is that of the late Keith Haring, looking out at you looking in, an artist captured by scientists, his momentary inspection in turn presented for your lingering one. Homage to an artist or assertion of primacy, it's hard to be sure. The perceptual gamesmanship returns to a lighter note with a hybrid photograph in which Albert Einstein morphs into Marilyn Monroe. The scientist as jokester? Yes, but also an assertion that the beauty of discovery should rival beauty itself.

Lastly, a classic of MIT's campus life, the remains of a piano pushed (a different one every year) off the fifth-story roof of a campus building, with high-speed photographs and charts illustrating the literal descent of the piano in front of thousands of spectators—and, hence, the metaphorical descent of man. Just kidding! It's mocking gravity and entropy at the same time it delights in the shared understanding of these concepts more than the concepts themselves.

You can't get at the real joke unless you peer across that divide to the community itself, which is defined by the fact that its members understand and even play with these concepts. It's not just the science—it's the scientists. ■

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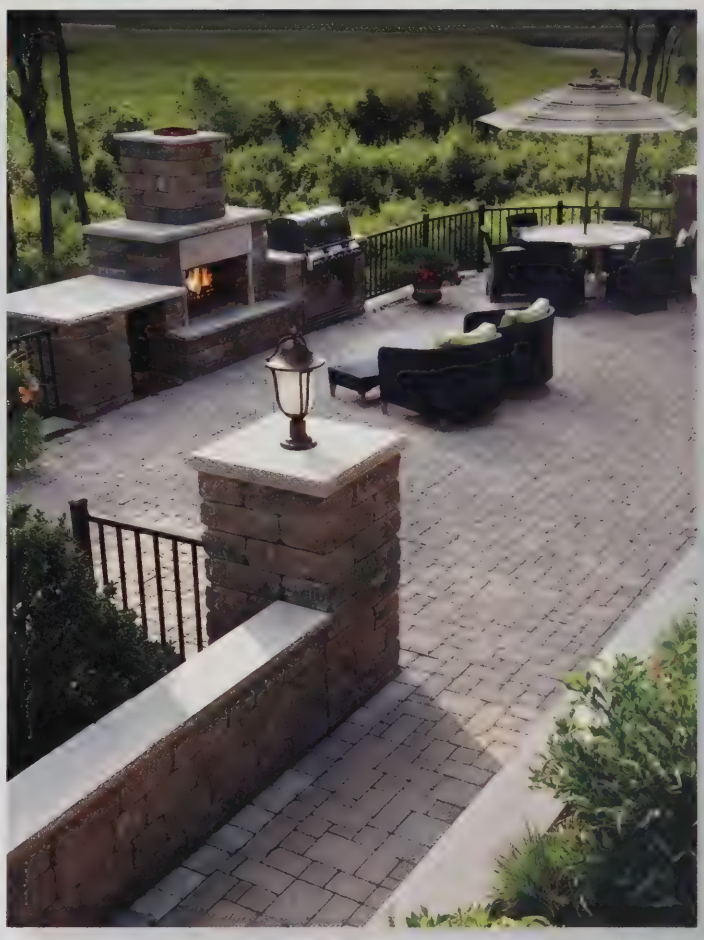
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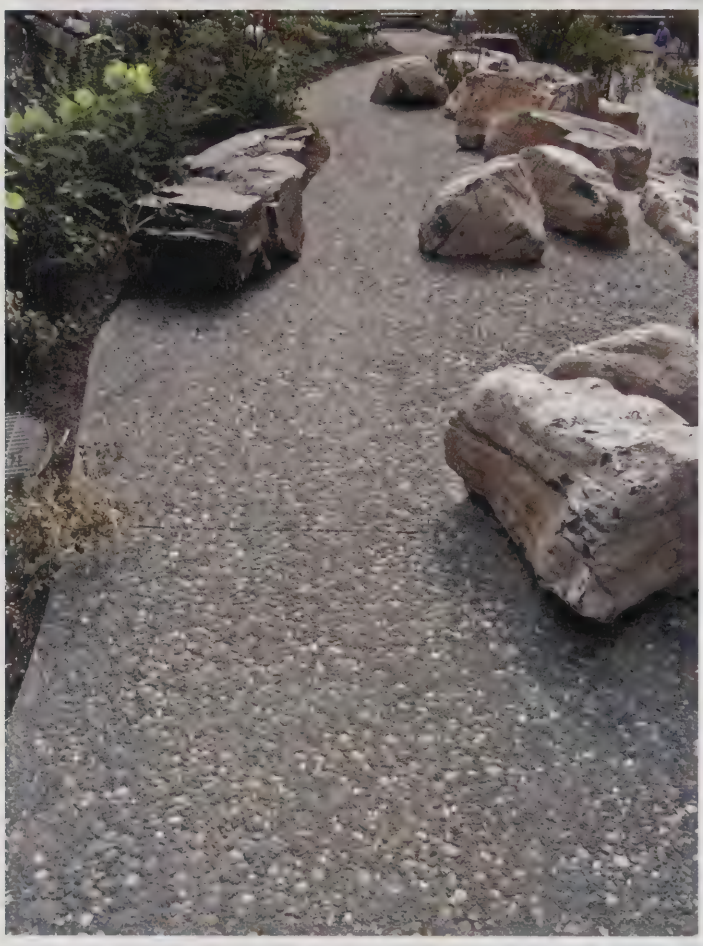
ABOVE
Detail, *Women Are Heroes*, from the 2009 exhibition in Paris based on the multinational project by French street artist JR. Photo: Fabien Baunay. (See page 44.)

COVER
Appeel, installation by TheGreenEyl, 2008. Visitors remove orange stickers, leaving white spots, individually and collectively changing the wall's appearance; the stickers then take on a life of their own when they appear elsewhere. Photo courtesy TheGreenEyl.

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Final Say

A little-noted anniversary this year was the 100th birthday of Marshall McLuhan, the cultural theorist perhaps best known for the phrase "the medium is the message." McLuhan was prescient in ways that even he, a master of self-promotion, might not have imagined. The phrase was coined at the dawn of what came to be known as the Information Age; soon information, or at least its relative quality, became less important than the technology that delivered it.

And so we now find ourselves at the dawning of yet another era, which might be called the Media Age. It's perhaps a sign of primordial confusion that the word itself lacks precision—commonly used as both a plural and a singular, it is a homonym with multiplying meanings and manifestations: corporate entertainment and news entities; electronic gadgets such as smartphones and tablets; social networks such as Facebook, Twitter, LinkedIn, Google+. The phenomenon has sparked Darwinian races for corporate survival, but it has also ignited a new hypervisual culture, where infographics abound, YouTube replaces manuals for how-to advice, and one of Amazon's bestsellers is a book on typography (Simon Garfield's *Just My Type*). Architects naturally find themselves in the middle of the fracas, scrambling for a foothold, knowing instinctively that some sort of reinvention of the profession is underway. Nor are their buildings immune from the effects: "media façades" sport a form of electronic ornamentation, their pixelated LED screens a digital version of the tesserae in ancient mosaics.

In the midst of corporate hype and consumer lust for all things digital, we sometimes forget that media is also the plural of "medium," suggesting a vehicle for the communication of ideas.

It is that last definition that makes this issue of *ArchitectureBoston* an appropriate close to my tenure as the magazine's founding editor, which has been marked by the conviction that architecture itself is a medium that expresses cultural ideas and values. When the Boston Society of Architects formed a communications committee in 1997, the notion of a magazine with a national distribution of 15,000 and an active website was in no one's mind. I was hired that November to edit a quarterly 16-page supplement to the BSA newsletter, scheduled to launch the following March. But after discussions with members about the stories and material that might be included, the desire for something more substantial became obvious. The March supplement was canceled, and a new 48-page magazine launched the following June. By publishing standards, this was crazy. (Sometimes it's good not to know any better.) But with its new "ideas" magazine, charged with the exploration of the ways architecture influences and is influenced by our society, the BSA found just the right medium for its message of inclusive public discussion of the built environment.

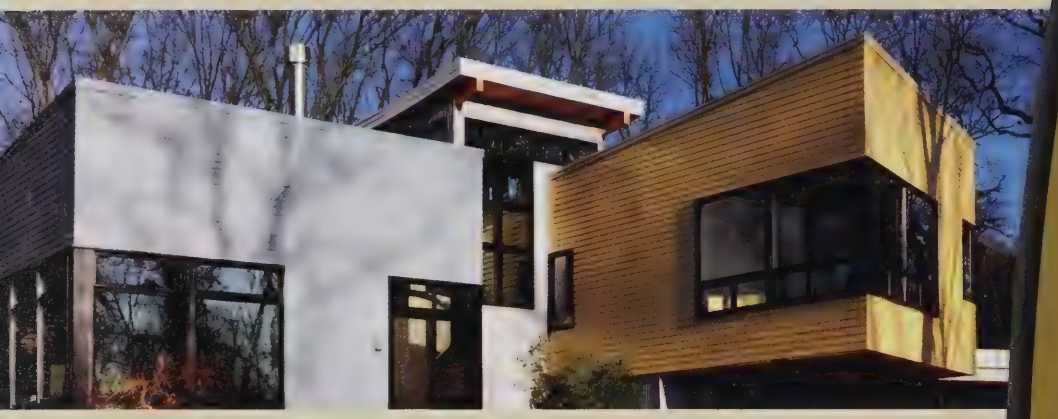
Can there be any better job than editing this magazine? No. The editorial freedom that the BSA's leadership has accorded; the creative opportunities; the intellectual stimulation; the gifted coworkers with remarkable generosity and good humor; the chance to promote important ideas and bring attention to new talent; and, above all, the ability to engage with this region's extraordinary design community—none of this can be matched.

We sometimes forget that media is also the plural of "medium," suggesting a vehicle for the communication of ideas.

But after 14 years, the unrelenting drumbeat of deadlines can make an editor yearn for something different. I am tantalized by the thought of diving deeply into new creative challenges, with all the fresh energy that can bring. Change can be good for people, and it can be good for magazines, too. *ArchitectureBoston* will thrive with fresh leadership—and with the continued support of the readers, contributors, editorial board members, advertisers, staff, and BSA members who have made it a respected voice in the national design discussion. I thank you all. ■

Elizabeth S. Padjen FAIA
Editor

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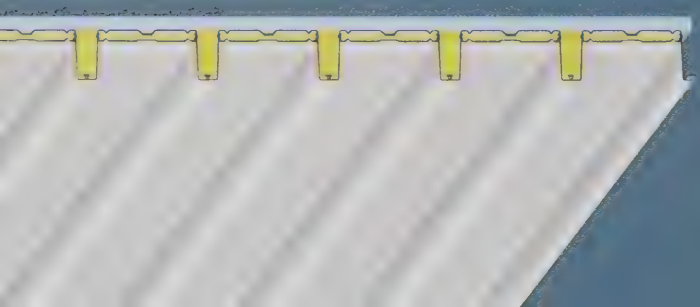


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On "Science" (Fall 2011)

The discussion of LEED and USGBC ("The Shadow Government") in your "Government" issue [Summer 2011], followed by your "Science" issue, was a nice juxtaposition of the challenges facing the profession. Sergio Modigliani, in his letter to the editor, is partly right when he alerts us to the danger of LEED and USGBC further diminishing the status of architects. But the principal danger is making architecture even less relevant than it already is in the minds of the public.

Its relevance has diminished by virtue of architects becoming less and less informed about the practical and functional aspects of buildings: structures, mechanical systems, and envelope design (in other words, building science and technology) on the one hand, and construction, permitting, financing, and delivery systems (project implementation) on the other. Architecture schools are guilty of fostering this deficiency but so is the profession as a whole by focusing primarily on one segment at the expense of others. That is why it is high time to revamp curricula across the board by reintegrating all the components of good architecture. This idea applies not only to architecture schools but also to all schools that prepare professionals who will go into the construction sector of the economy.

The most relevant trigger for such a revamping is climate change, which has changed all the rules of the game. If all design studios were to adopt the interdisciplinary approach to designing projects that cutting-edge firms now use—namely IPD, BIM, and modular building delivery systems—combined with a green mindset, the profession would move back toward its essence, which is creating real (i.e., quantifiable) value for the projects that architects help guide from inception to completion.

A petition aimed at just such a curricular revamping by the National Architectural Accreditation Board (NAAB) is available at www.change.org/petitions/require-of-graduating-architects-full-competence-to-design-energy-neutral-buildings. Its goal is to inspire NAAB to set as its *2013 Condition for Accreditation* that every North American architecture school's curriculum provide all graduates with the theoretical and practical competence to design high-quality carbon-neutral/zero-net-energy built environments while preserving the traditional values of architecture in its striving for beauty and service to society.

PETER PAPESCH AIA
Chair, BSA Sustainability Education Committee
Boston

The Society of Building Science Educators' (SBSE) listserv featured a discussion recently regarding architecture journals that focus on technical issues. Over 50 journals worldwide were mentioned in this discussion, and I don't think I had heard of more than two or three of them. At about the same time, my subscription to *Science* was running out, and I was wrestling with whether or not to renew. I had found that most of the articles deal with issues outside my areas of interest, although there is typically one article per issue pertinent to climate change.

Then the *ArchitectureBoston* "Science" issue arrived. It was exhilarating to hold in my hands a magazine focused on the issue of scientific inquiry in the field of architecture, and the discussions within were inspiring. Although the field may not need one more journal, I feel strongly that a publication (preferably online) that assembles and distributes cutting-edge information and examines the performance of research-based design is essential to the progress of the architectural profession. I am not asking your fine magazine to depart from its editorial mission but hoping that your Fall 2011 issue will inspire a new enterprise that could serve a vital need.

A. VERNON WOODWORTH AIA, LEED AP
Boston

The recent "Science" issue got me going again! As an undergraduate at Harvard College in the dimming past, I chose as a major Architectural Science. The Arch. Sci. program consisted of two studio courses—works in two and three dimensions—and several classes on the history of architecture from the Tower of Babel to Rockefeller Center. This left me time for other interesting electives: David Reisman on his Lonely Crowd; Erik Erikson on his Human Life Cycle; T. Lux Feininger's studio painting; James Watson on his (and Francis Krick's) discovery of DNA; and Clyde Kluckhone on anthropology around the world.

This is a roundabout way of explaining my reaction to the "Science" issue: My dictionary—also from those distant college days—describes art as the "production or expression of what is beautiful, appealing, of extraordinary significance," and defines science as "systematic knowledge of the physical/material world." I think the promise of modern architecture is multifold: delight in personal use; contribution to the public realm; showing grace plus economy of means; and celebrating the art of making, with durability and safety. The current, and hopefully continuing, focus on energy and resource conservation should be in support of the social and aesthetic settings we create. Hi-tech is a brainy way to make all our lives better, not just a style of interior or exterior decorating.

JOHN WILSON FAIA
Principal Emeritus, Payette
Boston

Appealing and timely though it might be, the practices of true science and architecture are inherently so different—grant-funded research for uncovering unknowns vs. fee-based businesses for producing a product—that we need to be careful in making direct translations.

A common theme in several articles in your "Science" issue is monitoring and recording building performance. However, making this useful information accessible to the full profession is a huge chore. As Tyrone Yang points out ["Two Views on Two Cultures"], there are inherent proprietary problems, potential lawsuits, and serious funding challenges. Pure science—that is, basic research—usually funded with public money, doesn't have these problems.

When scientific research is specific for product development, it is usually undertaken within the closed confines of industrial companies, funded from later patents and sales of said product. Architecture doesn't have this economic luxury.

Another common theme in the *ArchitectureBoston* articles comes from firms describing research. These firms appear to have variations on a common approach—part mining the existing literature for products, materials, or engineering, and part original research/development, sometimes in association with academia. These firms deserve praise. Also to their credit, each has some outreach to give information to the general profession. However, the potential and need for research is far greater than any one firm, or even firms working in collaboration, can undertake. True research is very expensive, out of reach of most fee-compensated practices, and probably requires the expertise of dedicated scientists. Again, proprietary interests present inherent conflicts for publication.

So the questions become: How can performance information be collected, organized, and distributed without running afoul of proprietary problems? How can basic research be conducted at the scale required, and its findings organized and distributed? And how can each of the above be funded?

Several entities (the National Academy of Environmental Design, the National Institute of Building Science, and the Center for Building Science, to name a few) have begun to address these questions. However, it is difficult to imagine a way forward that doesn't involve a far deeper and directed connection with academia. Only academia has the wide expertise in the myriad of fields without the conflicts and encumbrances of private clients. Academia also has the best organization for access to deep-pocket grant monies. That connection, however, needs to be considerably strengthened and formalized, maybe independent from or on the periphery of the architectural departments.

The biology department at Stanford University may provide an adaptable model. A few years back, it erected a new building (by Norman Foster) now called Bio-X. Stanford recognized that many current science topics are simply too complex for any one discipline. X refers to the uncertainty about which disciplines—neurobiology, physiology, genetics, biophysics, and biochemistry, for instance—will be required to investigate any particular study. Consequently, subsets of these departments reside within Bio-X so that disciplines can be cheek-by-jowl (with the mainstay of the departments in other buildings). Stanford now has a competitive advantage in its grant applications, touting its coordinated cooperation with physical adjacency to back that up.

Arch-X?

FREDERICK NOYES FAIA
Frederick Noyes Architects
Boston

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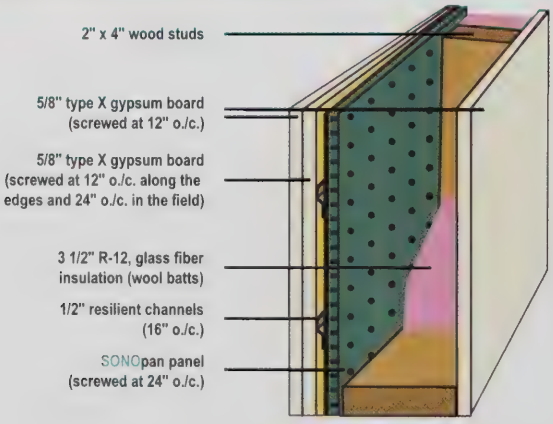
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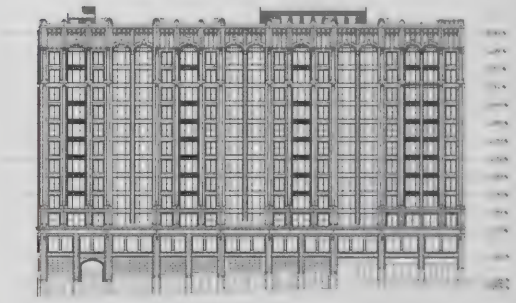
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Gretchen Schneider AIA, LEED AP is the executive director of the Community Design Resource Center of Boston.

ABOVE
BMW Guggenheim Lab during a lively "Urbanology" game. Architect: Atelier Bow-Wow. Photo: Paul Warchol. © Solomon R. Guggenheim Foundation.

FOR MORE INFORMATION
www.bmwguggenheimlab.org

BMW Guggenheim Lab

New York City
August 3–October 16, 2011

It's a great goal: to promote thoughtful discussion among designers, thinkers, and "regular" people about the future of the city. In our post–Jane Jacobs era, it's also a popular goal, and one of the most vexing. Too few get it right. The BMW Guggenheim Lab is no exception.

For three months this fall, the BMW Guggenheim Lab has transformed a vacant lot on New York's Lower East Side into "part urban think tank, part community center and public gathering space." The Lab travels next to Berlin, followed by a stint in Mumbai. The New York Guggenheim will exhibit the results and then the two-year cycle will be repeated twice more, in six other cities.

The layout is more theater set than exhibition—which is both its promise and its challenge, as success depends on the activity of the moment. The Lab will host more than 100 events: discussions; speakers; movies; workshops; and classes on yoga, meditation, even bike repair. I visited on an August Sunday with family members. A few fellow yuppies milled around, and a highly scripted game, Urbanology, took place at one end. As my 13-year-old niece observed, "The website makes it look interesting, but there's just not much here."

What was it all about? For the uninitiated, it was hard to tell. Despite the sophistication of the sponsors (and the structure), there was a surprising lack of interactivity. Both low-tech (Post-it notes, chalkboard) and high-tech (iPad stations, QR codes) information-sharing devices were missing—unless you want to go home and join the website's comment threads.

Meanwhile, the park across the street was packed with people representing a vast array of ages and languages at play. The question remained unanswered: How do you involve them in a discussion about the design of the city?

Anya Domlesky is a writer, researcher, and landscape designer who has worked at the Canadian Centre for Architecture and is now studying at the Harvard Graduate School of Design.

RIGHT
Crosstown Moment, by James McLeod. Glass and enamel, 2011.

Invisible Cities

The Society of Arts and Crafts
Boston
August 6–October 22, 2011

What happens when three Turkish and three American artists spend time in the same cities, make work in one medium, and share source material? A venerable Newbury Street gallery features this experiment in cross-cultural collaboration.

Invisible Cities, organized by Floating World Projects and conducted through MassArt and Mimar Sinan University, showcases fused glass-panel collages that were made during a MassArt residency last summer. The small panels incorporate silkscreened images of street-scapes, archival maps, elevations, and skylines of New York and Istanbul. The ongoing process of discussing and sharing materials and techniques is as important as any individual piece on the wall. Music and video will be added for a multimedia installation in New York next year.

The exhibition continues the Society of Arts and Crafts' (SAC) long-standing support for new approaches to craft. In the retail gallery downstairs, unrelated glass work in jewelry and tableware is also layered and luminous—and perhaps more visually compelling. It prompts one to imagine the dynamic energy that experimental collaborations among the SAC's own artists might bring to Newbury Street.





Seen

The Central Souk
Abu Dhabi, United Arab Emirates

Mark Klopfer ASLA is an architect and landscape architect at Klopfer Martin Design Group in Cambridge, Massachusetts, and an associate professor of architecture at Wentworth Institute of Technology.

ABOVE
The Central Souk
Architect: Foster + Partners. Photo: Nigel Young, Foster + Partners.

For the author's photos of the Central Souk: www.architectureboston.com

As I wander through the core of Abu Dhabi's 1960s-era central business district, I catch a glimpse of a large, finely detailed wood box. This building is unlike most new buildings in the region. It is not a glass tower standing alone in unshaded heat; it is low and meets the scale of its surroundings. Its cafés and shops open onto the streets, and its large recessed portals are inviting. The building is the Central Souk, or market, designed by Foster + Partners to replace a traditional market that was destroyed by fire.

Inside, the fine detail continues. What were concrete panels outside become suspended wood screens. Central spaces offer modern transformations of the historic Arab pedestrian street. They are tall in proportion and skylit, allowing dappled light and creating a cool and solemn environment within. Two large atria recall the interiors of Louis Kahn's Center for British Art. There, daylight washes concrete and light-colored mahogany panels—a foil to New Haven's gray weather. In the Souk, a similar atmospheric quality is achieved with dark mahogany screens—a foil to the Persian Gulf's sun and heat. A roof garden alternates planted and social zones, again recalling time-honored building strategies.

The public may not care about such architectural finesse. Shopping for luxury goods in air-conditioning may be all that matters to most. As a shopping center, the Souk struggles against the larger Abu Dhabi Mall with its ice rink and full collection of exclusive stores. Yet to a traveling architect like me, even without the sounds and smells of the market it replaced, what makes this new Souk wonderful is its interpretation of traditional form and scale, and its ephemeral qualities of light and shade, which together create a building of its place.

Considered

At the Movies

The Vision Thing I
***Metropolis*, 1927**
In what may be the great-grandaddy of all architecture movies, the era's visionary architecture slips reality into this otherwise full-throttle dystopian extravaganza.

The Architect Archetype I
(Solitary Artist)
***The Fountainhead*, 1949**
The specter of the bombastic Howard Roark continues to torment real architects.

Buildings as Characters (Hollywood Edition)
***Vertigo*, 1958**
Alfred Hitchcock's masterful use of the built environment makes heads spin.

Buildings as Characters (European Edition)
***Last Year at Marienbad*, 1961**
In this French art-house classic, a couple is infatuated, haunted, and smothered by their pasts—a problem shared by the ornate getaway that they can't seem to get away from.

The Vision Thing II
***Bladerunner*, 1982**
Genetically engineered robots learn how to love (and hate) in teeming, spectacular dystopian sci-fi cityscapes of real and imagined architecture.

The Architect Archetype II
(Sensitive Romantic Lead)
***Jungle Fever*, 1991**
Spike Lee's iconic interracial relationship drama features an architect, his secretary, a failed promotion, and angst galore.

The Architect Archetype IIIA
(Dysfunctional Family Girl)
***One Fine Day*, 1996**
In one of the only portrayals of female architects on screen, Michele Pfeiffer plays a stressed-out single mom who (yawn) chooses between kids and career.

The Architect Archetype IIIB
(Dysfunctional Family Guy)
***My Architect: A Son's Journey*, 2003**
Louis Kahn was an acclaimed architect and educator, and the father of three, somewhat simultaneous, families.

The Real Housekeepers of Bordeaux
***Koolhaas Houselife*, 2008**
A great architect and a great client create an extraordinary house in France. But the cleaning lady is the true star of this marvelous documentary.

Back to the Future

The Trouble at City Hall Plaza

Robert Campbell FAIA is the Pulitzer Prize–winning architecture critic for *The Boston Globe*.

This essay first appeared in *The Boston Globe* on August 5, 1973. Robert Campbell, reprinted with permission.



RIGHT
City Hall Plaza in 1973. In July 2011, the Boston Redevelopment Authority issued a request for proposals for yet another redesign. Photo: Ernst Halberstadt. Courtesy the US National Archives.

In 1973, Robert Campbell launched his career as the architecture critic at The Boston Globe. *He probably never expected that, 40 years later, Bostonians would still be arguing about the subject of one of his first essays: City Hall Plaza. The Summerthing festival is gone; street musicians rarely play pan flutes; food trucks abound. Otherwise, the story is much the same.*

Why is it that, in spite of the best efforts of Summerthing, City Hall Plaza never seems to come to life or be the right size for any activity smaller than a Bund rally?

It's always too big, too empty, too grand. There are too many things it doesn't have enough of. For example:

- Enormous sidewalk cafés, with parasols over the tables;
- Shouting street vendors selling eggplants and knishes;
- Men playing flutes, with small crowds listening;
- People making speeches about how the Communists are stealing our bodily fluids;
- Moonlight concerts on hot nights.

In other words: Life.

American tourists flock to a place like the Piazza San Marco in Venice. Not to admire the architecture, but just to sit at a café, sip a soft drink or wine, and watch people walk by, looking like actors strolling on a stage.

But City Hall Plaza doesn't look or feel like a stage. It looks more like a parking lot temporarily cleared of cars. It doesn't have a real café, and if it did, you wouldn't sit there because there wouldn't be anyone to watch, and even if there were, they wouldn't look as if they were on a stage. They would look like they were trying to get across the Gobi desert ahead of the bandits.

In case anyone doesn't know, the reason nobody is out there selling tacos in the plaza is because the city forbids it. The city believes that the plaza is there to give each of us a perfect, uncluttered view of City Hall.

If you can think of better things to do with it, you might try writing the mayor.



Focus

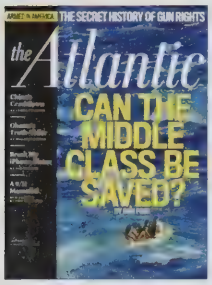
Greer Muldowney: A World Away

Greer Muldowney is a fine-art photographer based in Boston whose work has been exhibited internationally, including most recently at the Panopticon Gallery in Boston. Her series, *6,426 per km²*, focuses on the world's most densely populated urban center, Hong Kong. Through richly saturated color and shifting patterns of repeated windows, decks, and buildings, Muldowney invites Western viewers to look beyond the media headlines at these residential neighborhoods and to see these places as more than statistics.

LEFT
Cheung Sha Wan, 2011. Courtesy the artist

ONLINE SLIDESHOW
www.architectureboston.com

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www.greermuldowney.com

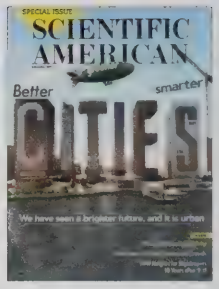












Covering the Issues

Gretchen Schneider AIA, LEED AP is the executive director of the Community Design Resource Center of Boston.

Divine inspiration?... Satirist P.J. O'Rourke turns sincere in "God's Engineer" (***The Atlantic***, September 2011). To "understand the new oddball global cityscapes," O'Rourke travels to Barcelona to experience the turn-of-the-20th-century work of architect Antoni Gaudí and is in awe of what he finds. A century before Gehry and his curvy contemporaries, Gaudí designed structures without edges and corners, embodying a sense of motion. In his work, O'Rourke sees geometry, proportion, biomorphism, and even a touch of the divine at play, calling La Sagrada Familia "a sermon in broccoli."

Appetizing tidbits... The visual-culture gurus at ***Print*** magazine dive into a "Movement" theme (August 2011)—the movement of people, objects, cities, ideas—as part of their ongoing mission to "explore why our world looks the way it looks and why the way it looks matters." Wayfinding gets a lot of attention: the legendary graphics of Amsterdam's Schiphol airport; integration of information design into architecture; how people create mental maps. Meanwhile, James Biber provides humorous, inventive ideas to improve movement through New York City's public spaces, such as tourist lanes on sidewalks (like highway slow lanes). Nothing's particularly meaty, but it's all great food for thought.

A tribute... In the flurry of 9/11 anniversary press, here's an eloquent architectural commentary from an unlikely source: ***Esquire***. With a balance that's all too rare, Scott Raab's "The Memorial" (September 2011) explores the human, political, and design story behind the creation of the World Trade Center memorial. Raab not only thoughtfully navigates the slew of competing interests but also clearly explains the memorial's design ambitions and challenges: It must serve as a daily lunch spot and lifetime pilgrimage destination, connect to the surrounding sidewalk, and repair the scars created first by the construction of the superblock itself and then by its horrific destruction.

The 'burbs are all right... Urban thinker and ***Forbes*** columnist Joel Kotkin dissects the latest census data in a brief print piece (September 12, 2011) and a series of related online essays (August 2011). Where are recent college grads, family-oriented thirty- and fortysomethings, and retiring boomers actually living? Though cities may be experiencing a renaissance in the US, most households are still putting down roots on the periphery. Over the past decade, even "hip and cool" cities such as Boston lost 40 percent of their (now) 35- to 44-year-olds—the age group that's buying homes, building businesses, and investing in schools. And despite the hype about affluent boomers retiring to downtowns, average Joes are staying put in their suburban neighborhoods. Kotkin's analysis: Cities are changing from "enduring places to temporary resorts."

Reinventing Edison... We're about to witness the end of the light bulb as we know it; 100-watt incandescents will be off store shelves in 2012, with their lower-powered brethren soon to follow. In ***Wired***'s recent cover story, "Let There Be LED" (September 2011), Dan Koeppel illuminates (sorry) the implications of this impending change. Although incandescent bulbs may be notoriously inefficient, abandoning them "means abandoning fire as our primary light source for the first time in human history." Koeppel traces the origin of the bulb and various attempts to replace it. It's a story of art meeting science, coming to your socket soon.

Densely speaking... Globally, nearly 70 percent of the population will be urban by 2050. Recognizing this trend, ***Scientific American*** devotes an entire issue to "Cities" (September 2011). The editors open with a plea for city-friendly public policies. Many of the stories that follow will seem familiar, but the mix is eclectic enough that most readers will stumble across something fresh. What is perhaps most significant is that the leading general-interest science publication (and the oldest magazine in the country) has devoted substantial resources to a "special issue" on the subject.

Dispatches from the GSD: 075 Years of Design

Harvard Graduate School of Design
Cambridge, Massachusetts
August 22–December 22, 2011

Who gives an exhibition the subtitle *075 Years of Design*? Maybe someone who wants to move the Graduate School of Design's comparatively short history into the weightier realm of three digits, like MIT—now celebrating its 150th anniversary—or the rest of Harvard, which turns 375 this year.

Understandably, the show is a compendium of some of the many highlights from the school's past. And its layout, juxtaposing moments from recent and distant memory, reinforces the sense of institutional presence. We are reminded of the many important designers and critics who have held sway at the GSD over the past three-quarters of a century: Gropius, Sert, McHarg, Geddes, Koolhaas, Rossi, Cobb, Eisenman, Moneo, and many more. This is not a school with a single point of view. Rather, as the show's historical exhibits attest, it has been a *smorgasbord* of choice.

Today, the GSD is attempting to become a school with a much more socially engaged direction under Dean Mohsen Mostafavi. And it shows. Although the historical exhibits (in horizontal glass cases) reveal a wide range of interests and periods, the companion thematic observations from current faculty speak to a much more consistent and focused GSD. To those of us who recall the Wild West formalism of the past generation (since, say, 1980), this anniversary exhibition will appear to be about a different school altogether.

In place of those decades of formal experimentation, we see a deeper social commitment now on the ascendant, one that returns to the ethos prevalent in the school's early years. It's an interesting lens through which to understand the GSD, and one that reflects the current dean's efforts at recalibration.

Though less eye-popping than the one-person shows that have dominated the gallery's programming in recent years, this exhibition offers much to see, from the many student publications created over the years to the broad range of representation techniques. It covers ideas, materials, surfaces, methods, form, and places all over the world. One comes away, though, with a sense that the GSD plans to engage more and speculate less.

George Thrush FAIA is director of the School of Architecture at Northeastern University.



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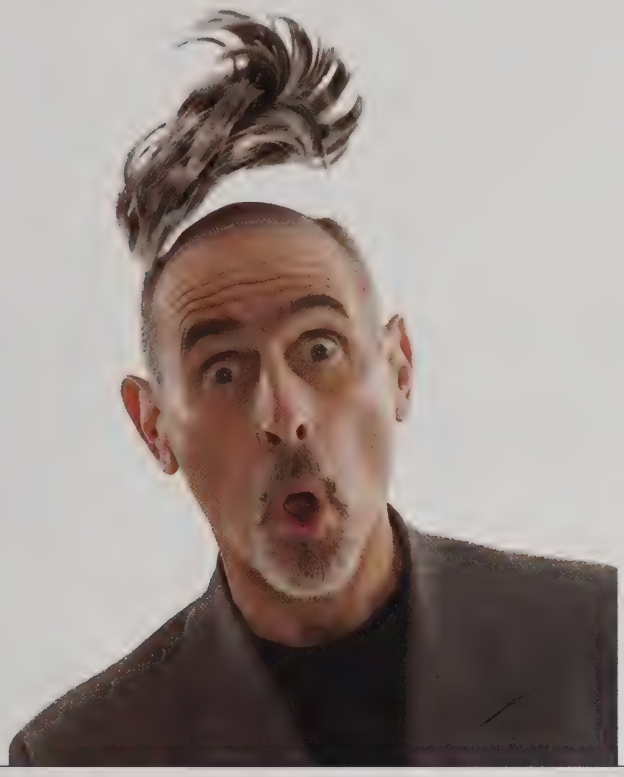


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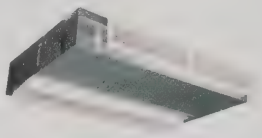
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The Message in the Medium

Say what you will—but how and where you say it matters.

PHOTOGRAPHY: CERVIN ROBINSON

Architecture has enjoyed a love affair with photography since the latter's invention in the middle of the 19th century. With the development of photographic reproduction in ink-on-paper journals, the relationship began to mature, and photographers and text writers came to be business partners.

By the 1880s, an architectural journal could include impressive photographs of a building and a related text, each printed by different processes on different papers. By the end of the century, "halftone" reproduction allowed printing text and photographs on the same page. Thereafter, neither a text nor its accompanying set of photographs stood on its own two feet. Each was propped up by the other—and the architectural journal was on its way to becoming the dominant medium for the presentation and discussion of architectural ideas.

Publication in the form of photographs became increasingly important to architects. Some designed with publication in mind; others did work that editors regarded highly but knew would photograph badly. In some respects, the architectural life of a building lay in published photographs.

Until well after World War II, the photographs in journals were initially black-and-white pictures taken by photographers with recognizable individual styles. By the 1980s, however, color reproduction started to predominate, and individual styles were becoming less apparent. Reproduction was more expensive, and architects began to share in magazine costs and take part in the selection of pictures (never mind independent journalism).

It was also an era that marked a change in the tools themselves. For many years, architectural photographs had been made with large cameras. But a shift soon came to smaller 4-by-5 cameras that would accept the Polaroid films used to determine exposure times. Camera technology continues to evolve with the development of digital cameras.

The ease of digital photography and the proliferation of inexpensive digital and online publishing media, combined with the demise of many ink-on-paper architectural journals, have persuaded many architects that adequate and certainly less expensive pictures can be made by their own office staff.

Yet there is a place for professional architectural photographers. We live in a world of visual media, where there is still a demand for high-quality images. And many photographers have found success and satisfaction in new directions, such as fine-art photographs of architectural subjects, often in the form of enormous prints made with large cameras—a form of picture-making with which the inexpensive digital camera and the inexperienced photographer cannot compete.

The field has seen challenges before. In its early years, the introduction of dry plates made picture taking easier than with wet plates, increasing the number of pictures taken but initially bringing down their quality. Presumably photography will similarly recover from the generally lower quality of digital work today. In many ways, the life of a building still lies in its photographs, whatever the publishing medium.

Cervin Robinson is an architectural photographer in New York City whose work has been featured internationally in magazines, books, and exhibitions. Known for his now-iconic images of significant American buildings such as Pennsylvania Station (demolished), he is the author, with Joel Herschman, of *Architecture Transformed: A History of the Photography of Buildings from 1839 to the Present* (MIT Press, 1987).

For an online slideshow of photographs by Cervin Robinson: www.architectureboston.com

THE SHOOTERS

A picture is still worth a thousand kilobytes of text. Architectural photography requires a special skill set—technical and aesthetic mastery, of course, but also the ability to understand design intentions and to translate them from a three-dimensional experience to a two-dimensional statement.

The following photographs represent the work of some of the region's leading architectural photographers, who continue to shape our understanding of the built environment. These images were all commissioned commercial work; many of these photographers also have active careers as fine artists and book authors.

For an online slideshow with additional images and comments by these photographers, go to: www.architectureboston.com.



NEWSPAPERS: JOHN KING, *San Francisco Chronicle*

John King

FOR MORE INFORMATION

As a member of the dwindling band of architectural critics who ply their trade at newspapers, I'm well aware of how lucky I am—and how my approach differs from the best critics who came before.

In the beginning, there was exquisite provocation: The likes of Allan Temko at the *San Francisco Chronicle* and Ada Louise Huxtable at *The New York Times* arrived on the scene in the early 1960s to give readers a good shake. Their audiences learned what was at stake as grand buildings fell and oppressive ones rose, why change is neither a given nor necessarily a good, and why we can't leave our surroundings in the hands of developers and hacks and the powers-that-be.

Now such notions as "contextual design" and "managed growth" are part of the civic dance. Architectural review boards operate in cities large and small and are often constructive but also capricious. The definition of historic resource gets stretched by some advocates to include anything with four walls and a past. Urban-design principles are of little interest to "eco-urbanists" who proclaim the virtues of all things sustainable and dense.

It's a confusing terrain, with ever-more-varied voices and agendas. Which may be why I find myself trying to connect the dots rather than lay down the law.

That's not a job description I learned in journalism school, but by all evidence it resonates. In today's fragmented media scene, I can stand out by drawing on age-old tools of the newspaper trade: Before putting on the critic's hat, I covered City Hall and planning and the business of real estate. My editors place more value on lucid writing and solid reporting than on coy references to Andrés and Rem.

There's still a place for activist criticism that strives to nip excess in the bud, as the *Chicago Tribune*'s Blair Kamin shows so well. But there's also a need to bring the landscape around us into sharper focus. Think of it as an ongoing course in design basics: why the experience on the ground is as important as the silhouette in the air, why the cosmetic appeal of images shown to planning commissions isn't nearly as important as an actual building's materiality and craft. Architecture writers can help readers—the public—see more, and more smartly. We can help them understand the implications as we shape tomorrow's civic realm.

This is the unique role that general newspapers can play, precisely because of their general nature and because they have yet to be replaced as the primary community forum. My readers aren't architecture buffs receiving glossy magazines in the mail or turning to their favorite like-minded website. They're people who know that buildings and spaces can be deadening or dynamic, even if they're not sure why. They do know this: They want help making sense of our urban terrain.





FAR LEFT
Peter Vanderwarker
and Maria

LEFT
Eric Roth

EXHIBITIONS: MARK PASNIK, MICHAEL KUBO, CHRIS GRIMLEY, *pinkcomma gallery*

At a time when old media institutions such as publishing houses, journals, and newspapers face increasingly dire financial prospects, the gallery remains a flourishing site of cultural production and dissemination. We see the role of the gallery in an era of new media types as even more urgent for its ability to respond to a changing landscape of human ideas and interactions. The gallery is here to stay because it is good at things that virtual or printed means of dissemination do less well: putting people in physical space to interact with one another face-to-face in the presence of objects and artifacts. Discourse is at the very core of what makes a gallery an active site of exchange rather than a destination for passive leisure. This social and spatial coupling cannot be easily replicated online.

In creating architectural exhibitions, curators have tended to follow two approaches. The first regards exhibitions as "atmosphere" (to use Henry Urbach's term): temporary stages for spatial experiments freed from the constraints of more permanent or conventional commissions. The second, which is closer to gallery practices outside the architectural field, regards the exhibition as a form of knowledge: a site in which visual, historical, or data-driven content can be brought together to instigate discussion around issues of concern to the discipline. Although design plays a crucial role in how this material is shaped and presented, it is content, not format, that drives the making of such exhibitions. The first approach treats the exhibition as an excuse for design production, while the second regards it as a form of cultural production.

We lean toward the latter, seeing the greatest disciplinary relevance of galleries not in more spectacles but in their ability to promote discourse that can reshape the discipline. We stake our bets on exhibitions that challenge the viewer to think more deeply or critically about issues concerning the built environment—and to engage with colleagues and the public in ways that other modes of design production, whether physical or virtual, rarely permit. Recent shows employing a range of techniques to provoke conversation include: *Clip/Stamp/Fold*, curated by Beatriz Colomina and Princeton PhD students at Storefront for Art and Architecture (displaying an archive); OMA/Rem Koolhaas's *Cronocaos*, at the Venice Biennale and New Museum (instigating a critique); and Jean-Louis Cohen's *Architecture in Uniform* at the Canadian Centre for Architecture (producing historical scholarship).

The gallery is one of the few types of dissemination that has not been entirely overturned by new media formats precisely because curation and social engagement remain central to a gallery's mission. Although these formats enable broader possibilities for installations and more opportunities for outreach, the basic function of the gallery remains unchanged—a counterpoint to design practice and a site for commentary, reflection, and discussion.

Chris Grimley, Michael Kubo, and **Mark Pasnik** RA
the directors of the
omma gallery
in Boston and the
of BSA Space. Their
allery's 19 exhibitions
Grimley and Pasnik
are principals of
over,under, an
interdisciplinary
design practice. Kubo
pursuing a PhD
at MIT in the history
ry, and criticism

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RIGHT
Anton Grassl



RIGHT
Steve Rosenthal

BUILDING INFORMATION MODELING: PHILLIP G. BERNSTEIN FAIA. *Autodesk*

Phillip Bernstein FAIA

FOR FURTHER READING

When the idea of Building Information Modeling (BIM) started to hit the full consciousness of architects a few years ago, it was seen mostly as the next version of CAD, best used to create precisely coordinated drawings from a 3D model. But there was another idea in there somewhere, a vague notion of collaboration and integration, a thought that moving from mechanical drawing to parametric modeling might mean something bigger in making buildings. Does it?

Of course, the *raison d'être* for BIM—and how most young designers pitch it to their older, less savvy managers—is productivity. But, much as CAD was initially adopted as a tool for faster drafting but soon launched the age of the curvy façade, maybe the "building simulation" that is full BIM is likewise leading us someplace unexpected. It was Alberti who first asserted that the building's design exists apart from its construction and that the builder should slavishly execute that design model. When that design is now a BIM model, however, it's the architect's authorial role that may well take a hit. Is that a bad thing?

Architectural labor theorist Paolo Tombesi suggests that BIM is "likely to produce a lowering of social transaction costs by making information less subjective, its exchange speedier, and its monitoring more precise." There's that precision argument again, but with a twist: a lowering of the "transaction cost" of participating in the design itself. A building designed with BIM is not encoded in the special language of architects—plans, sections, and elevations—and is thereby accessible clearly to everyone involved in the design process: collaborators, builders, even clients. Some of that "authorial mystery" of the designer evaporates, and in its place appears the precision of a digital model that gets hot and cold, has operating doors, and can generally give everyone a great idea of what's alleged to be. From this democratization might well rise greater design literacy and even bring an "architectural springtime" much like what's been inspired of late by Facebook and Twitter. Better design has to be the result.

While Alberti might disagree, the authorial role of the architect isn't completely pulverized by BIM. Tombesi also suggests that BIM's "simulative and predictive capabilities" decrease the subjectivity of the result. But if BIM provides "just the facts, ma'am," it also creates an opportunity to leave the mundane tasks to the technology, allowing architects to spend their time finding, testing, and implementing even better ideas.

BIM won't replace design talent—and may even quickly expose its lack—but like any tool in the hands of a master, it just might empower the process of design as never before.



BELOW
Richard Mandelkorn



PUBLISHING: KEVIN LIPPERT, *Princeton Architectural Press*

I was a bit taken aback to read this first sentence in the manuscript submitted by the author of a forthcoming book: "Media's pressure to make architecture into a consumer product concerns me. The resulting artifacts are conceived as disposable, only useful until the new model comes along." Wait a minute, I thought. Is this a dig at his publisher, who is arguably part of the media pressure to make consumable products about architecture, books on "the latest model" designer, buildings, and other hot topics?

We all—architects and publishers alike—want to be in the business of producing lasting objects of significance that transcend the unforgiving cycles of fashion. But even though Princeton Architectural Press prints all its books on acid-free paper and sews their bindings, the inescapable truth is that publishing is very much a business of producing consumables, whether paper or electronic, and consumables are, by their very nature, products of fashion. This surely informs our thinking in the kinds of books we publish (What are our readers interested in now? What topic can we define that might create a trend to capitalize on?) and how we publish them. (What's a "sexy" package? What's an appealing price in a crowded and often difficult market?)

Architecture is richer, better made, more functional, more beautiful, more useful—whatever criteria you use to evaluate buildings or design—as a result of the written and published discourse around it, whether in books, magazines, or well-executed websites. Although I might regret our tacit participation in a culture of producing consumable goods, especially when some of those must be literally disposed of (the publisher's nightmare: the horrific "pulping" of unsold excess inventory), I truly believe that the library of books from Princeton Architectural Press has improved the built and visual environment.

Unlike most consumer goods, if you put ours on a climate-controlled bookshelf, they will last, our paper manufacturer tells us, for 300 years or more—not too shabby for "disposable" media and certainly a lot longer than electronic media and even most buildings, especially those built today. Since its origins in reprinting classic 19th-century tomes (such as Letarouilly's *Edifices de Rome Moderne*, still in our catalogue), the Press has become a keystone in a massive act of documentation of the architecture of the 20th and 21st centuries, a project in which publications such as *ArchitectureBoston* are also important participants. I'm happy that the books we make today will endure long enough that another publisher might reprint them from the originals a few centuries hence, ensuring that the architecture we document will last long after the forces of fashion or commerce have knocked it down to make room for the new.

Kevin Lippert is the founder and publisher of [illegible]

FOR MORE INFORMATION

RIGHT
Chuck Choi



ANIMATION AND 3D VISUALIZATION: LON GROHS, Nemetschek

Lon Grohs

FOR MORE INFORMATION

Architecture is itself a tangible subject: visible, physical, concrete. The experience of architecture, however, is anything but that, and is profoundly visceral. It's a sensation, an impression, a feeling.

Communicating the physical characteristics of architecture is a relatively forthright technical exercise. Conveying the emotive aspects of architecture is a different matter entirely.

A range of visual techniques and media including sketches, renderings, models, and photographs, are traditional means of conveying information about the experience of a building. In the past decade, we've witnessed a remarkable evolution of these long-established media types, and visualization and animation have swept in to become part of the lexicon.

So-called 3D visualization now offers a sophisticated projection of an architectural experience that, despite the common moniker, is still essentially a two-dimensional snapshot of a building at one point in time. But new technologies are already expanding the media arsenal.

Foremost among these is architectural animation. At the turn of the millennium, a standard walk-through or fly-through was a meaningful and sufficient experience. It provided a glimpse into the future world, allowing the viewer to analyze and subsequently synthesize an impression of the space, and was a useful means of transmitting physical information about the architectural design. At the time, however, technology and skills had not advanced far enough to successfully convey the spirit of the design. The technique was met with harsh criticism—rightfully so, because it was interpreted as cold and lacking a soul.

But innovation in this medium happened rapidly and almost exponentially. By the middle of the decade, the terms "walk-through" and "fly-through" seemed a vestige of the past. The "architectural film" had evolved, and a new genre was born. In fact, the visual language of the architectural animation progressed so quickly that the story became the motivating factor.

This new medium is no longer an unadorned expression of a physical realm yet to be built, but a manifestation of a specific glimpse into a future world. It presents an exacting and layered environment complete with flora and fauna, likenesses of its inhabitants, specific atmospheric conditions, precise times of day, and ambient sounds—all of which can be varied within the narrative of the film, thus adding a new dimension to architectural representation: time.

And this is just one example. Other types of media are evolving at a similar pace—including augmented reality, rapid prototyping, and real-time visualization—all of which promise new tools not only for presenting architectural ideas but also, with increasing integration into the design process, for creating them.



BLOGS: JOHN HILL, *Archidose.org*

When I started the Web page *A Weekly Dose of Architecture* in 1999, I had no idea that my site, which featured building reviews, was a "blog." Now, 12 years later, more than 156 million blogs are in existence, according to *Wikipedia*; a tiny fraction of those are related to architecture. In the supersaturated online realm, how influential are architecture blogs? What are their contributions to architectural discourse? And in what direction are they heading?

In the past decade, I've witnessed the changing role of online media in architectural journalism. Initially shunned by respectable journalists, bloggers have seen their influence rise with readership and as some have expanded into successful online businesses; many journalists now blog in addition to their print articles. With the widespread use of blogging software to structure Web pages of all types, blogs have reshaped both the way in which content is created online and its character, as the medium favors brevity and frequency.

The most trafficked blog, *ArchDaily*, churns out the equivalent of one *Architectural Record* magazine every day or two, including news items and scads of photos and drawings. Yet most posts typically feature only text contributed by the projects' architects, not unbiased critical commentary from people who have visited the buildings in person. This breaks with magazines such as *Record* that balance the architect's intentions with first-hand description and criticism, and is part of what some see as an unfortunate trend that values image over experience. In fact, many architecture blogs simply regurgitate press releases, with an "editorial process" as easy as copy, paste, upload, and publish. The role of the unique voice that is at the root of blogs is being lost amid the relative ease of syndicating PR content.

Of course the focus of everybody's attention these days is not on blogs but on social media: Facebook, Twitter, Google+. *Architizer* and *Archinect* follow this trend with user-generated architectural content, but the projects, profiles, and features are curated by editors to let certain content rise to the fore. This "hidden hand" points to what defines social media: It's not enough to post something online; that information has to be shared. But blogs and social media are strongly linked because many links shared via social media point to blogs, which are still the easiest and quickest way to combine text and images online.

As the differences between blogs and traditional journalism blur, and as browsing the Internet is superseded by sharing, everybody using social media becomes a curator, influencing what others read and in turn what blogs and journalists create. In this sense, the origin of content is irrelevant. Awareness of this role as curators ultimately sensitizes people to quality. Readers, the future of architectural media is in your hands. ■

John Hill is the founder, editor, and writer of three architecture blogs *A Weekly Dose of Architecture*, *A Daily Dose of Architecture* and *The Archi-Tourist*. He is also the US representative/editor for World-Architects.com.

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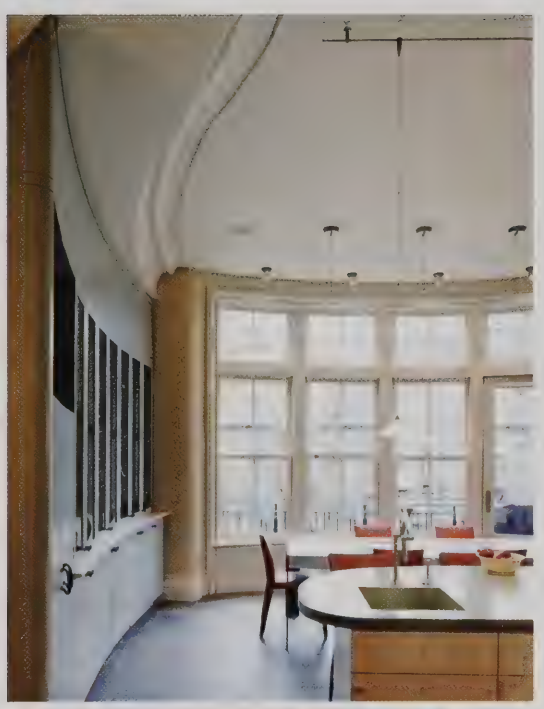
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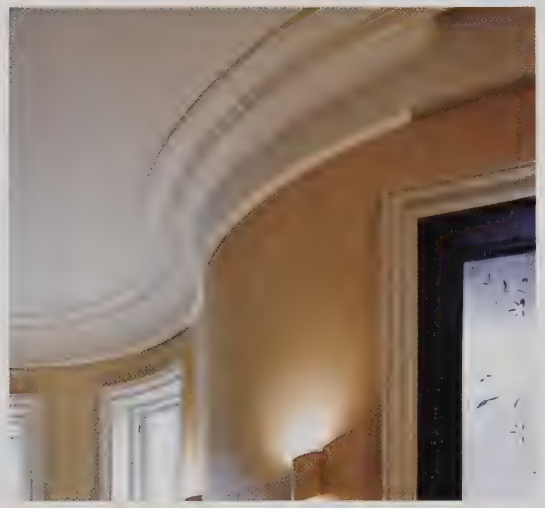
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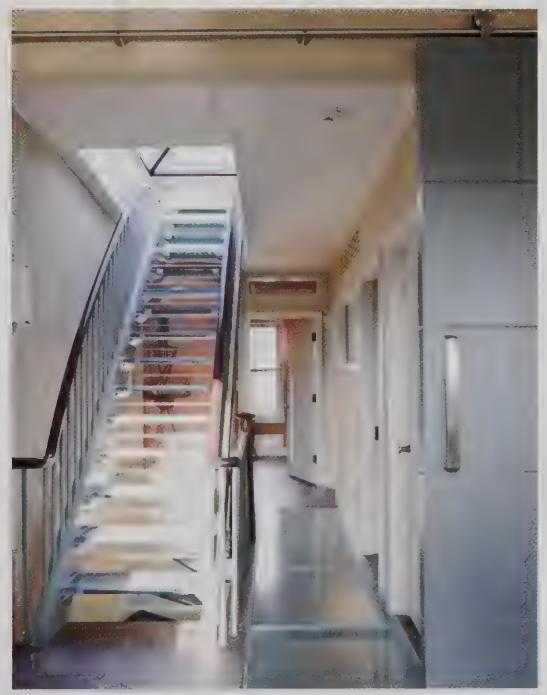
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the MUSEUM *as* MEDIUM

IS IT ABOUT THE ART OR THE ARCHITECTURE? BOTH. NEITHER. *by Dan L. Monroe*

Art museums have been the primary medium for public access, understanding, and appreciation of art since the 19th century. By presenting art from prehistory to the present, art museums connect a large and diverse public to humanity's artistic and cultural heritage. Born of the interests of the sophisticated classes during the Enlightenment and elevated to national institutions in Europe and America during the late-18th and 19th centuries, art museums have spread throughout the world. Now nearly every nation and major city features one or more art museums. Given the boom in museum construction over the last two decades, it sometimes seems that every one of them has been recently expanded or rebuilt.

Frequently dubbed the new golden age of museums, this period has signaled a significant shift in attitudes, expectations, and intentions since the first golden age at the end of the 19th century. We expect museums to serve as a medium for the interpretation of art. Increasingly, we also demand that they serve as a medium for the expression of architectural ideas. Unfortunately, integrating effective interpretation of art with architecture has proven very challenging.

The success of the art museum as an institution is testament to the importance of the creative spirit and creative expression among all cultures; our respect for the inspirational qualities of art is central to this success. Individual, civic, and national aspirations have also been very strong influences in the development of art museums; identity and pride provide powerful motivation. These forces—the thirst for the inspiration that art provides, which is often most associated with the creation of collections; and the drive to celebrate identity and aspiration, which is often associated with museum architecture—are not always in alignment.

It is not a new problem. The Beaux-Arts template for museum buildings, which was developed during the 19th century and carried forward well into the 20th century, often created an overly embellished architectural framework. Even when curators, directors, trustees, and architects were in accord regarding the premise that art should be presented in an imposing civic monument designed to awe visitors, debates sometimes arose regarding the nature of interior galleries. During the 1920s and 1930s, curators and some directors argued that architecture should support the presentation of art rather than the glorification of architects or the ambitions of patrons who sought grand, monumental buildings.

Among the first architectural responses to those arguments were the Museum of Modern Art in New York City (Philip Goodwin and Edward Durell Stone, 1939) and the Kröller-Müller Museum in the Netherlands (Henry van de Velde, 1938), designed in the then-new International Style. These buildings were highly flexible, very functional, purposefully unimposing, and far more visitor-friendly than the typical Beaux-Arts art museum. The white-cube gallery, first created in these buildings, became the standard museum gallery space (and remains so today). Finally, it seemed, an architecture had emerged that aligned fresh thinking about curatorial missions with ascendant social and cultural ideals. But with the intervention of World War II, relatively few museums were built in this era.

In any case, the new orthodoxy was turned on its head by Frank Lloyd Wright's Guggenheim Museum, which opened in 1959. Unquestionably a striking work of architecture, the Guggenheim is generally a woeful place in which to display works of art. Single-handedly, it reinvigorated the debate between architectural statement and the presentation of art, which continues more than 50 years later.

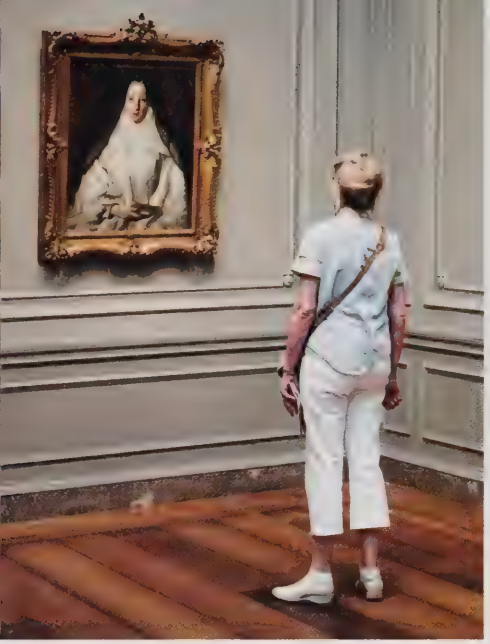
Several solutions have been tried, and we have seen extremes at both ends of the spectrum. Louis Kahn and, later, Renzo Piano created museum buildings that quietly reinforce and amplify the art presented within them. Their buildings rely on fine detailing and the use of natural light, proportion, and elegance rather than exuberant design to achieve success. Frank Gehry, Santiago Calatrava, Daniel Liebskind, Zaha Hadid, and others have created highly dramatic, sculptural buildings featuring various degrees of functionality and flexibility.

It is entirely possible to create beautiful art-museum buildings that are intensely uncomfortable to occupy.

Given the unprecedented number of museum expansion projects, especially over the past 15 years,

Dan L. Monroe is the director and CEO of the Peabody Essex Museum in Salem, Massachusetts. He has served as chairman of the American Association of Museums and is currently the president of the Association of Art Museum Directors.

OPPOSITE
NGA #37, by Max Hirshfeld, from the series *Looking at Looking*, which was shot at The National Gallery of Art from 2006 to 2008.



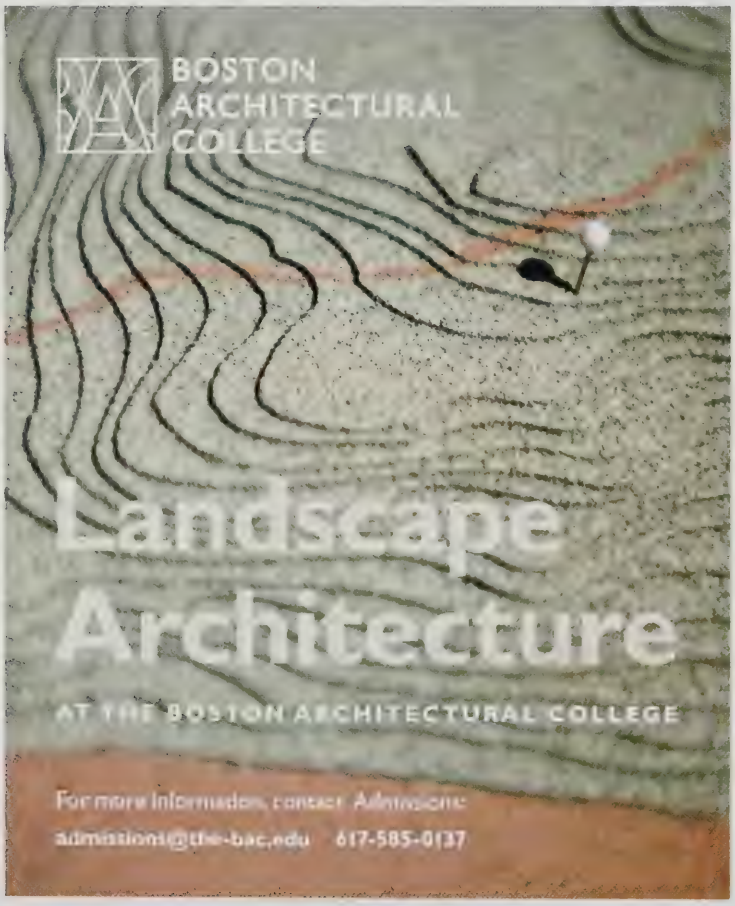
ABOVE
NGA #14, by Max Hirshfeld, from the series *Looking at Looking*.

one might assume the dynamic tension between the art museum as a medium for architecture and the art museum as a medium for the presentation and interpretation of art would be more commonly balanced in a way that recognizes the importance of both. But several impediments have constrained a broad-based realization of this goal.

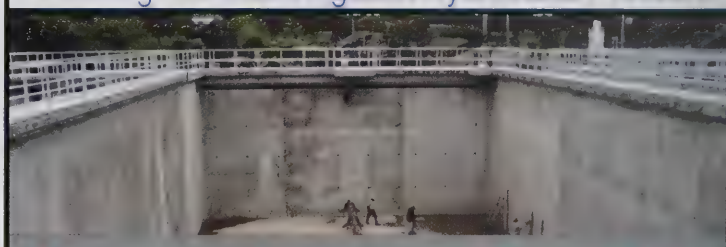
Few museum directors or boards of trustees do more than one expansion project in their careers. Staff who are charged with the day-to-day responsibilities of planning and implementing a construction program frequently have little familiarity with the building industry and may not have previously managed projects of such complexity. Yet surprisingly few museums attempt to learn from the experience of others who have already completed such projects. Art museums are prone to dealing with architects as artists, and most lack experience in being a strong client. Consequently, design too often trumps functionality.

The tremendous success of Bilbao convinced many directors and boards that "signature" architecture and more square feet will result in a transformation of the museum. This has generally been a misplaced expectation. The drive to create new or expanded facilities absent sufficient associated endowment has placed many art museums in a precarious financial position, especially as many museums fail to adequately project and account for the increased costs of operation and new programs; the economic climate since 2008 has only exacerbated this condition.

Changes in functional requirements have also contributed to the challenge. Art museums today are multifaceted facilities that must support not only the presentation and interpretation of art but also performing-arts events, social events, educational activities, shopping, eating, visitor services, and a host of back-of-house functions. Successfully meeting the needs of these disparate functions and integrating them into a cohesive whole is extremely challenging. Unfortunately, what is too often forgotten in the juggling act is the paramount importance of the nature and quality of the visitor experience.



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It is entirely possible to create beautiful art-museum buildings that are intensely uncomfortable to occupy. It is likewise possible to present and interpret art in reasonably effective ways while providing an overall experience for visitors that is unsatisfying. The totality of the experience includes a host of factors that have, in far too many instances, been ignored or given short shrift by architects and museum staff and trustees. Examples are all too familiar: unwelcoming entrances; awkward placement and design of admission and orientation desks; inadequate signage; poor acoustics; insufficient restroom facilities; lack of comfortable seating; confusing circulation flows; fatiguing and disorienting gallery layouts. A great deal of research exists regarding the ways people actually behave in art museums and the kind of experiences and spaces required to increase visitor engagement with art—yet very little of this information is incorporated into the design of most museums.

Building or expanding an art museum is an extraordinary opportunity. The trustees and staff are often sophisticated clients who are committed to promoting the arts; they tend to think in terms of cultural legacy and are often willing to embrace new, even experimental design. Architects welcome the prestige and the artistic license associated with the commission. Museum architecture occupies a special place in the design disciplines: It is often where significant design ideas are advanced, which in turn influence other building types.

But this same convergence of factors—legacy, fame, identity, openness to the new—too often conspires to promote the billboard statement. The ability to present and interpret art effectively or to create truly satisfying visitor experiences often receives less attention than the creation of dramatic architectural statements.

Now, at the beginning of the 21st century and well into the second golden age of museum architecture, we frequently see ourselves designing buildings that in too many instances are not very removed from their Beaux-Arts predecessors: advancing the monument at the expense of the visitors and their experience of art. The seamless integration of architectural expression, interpretation of art, and the visitor experience should be our goal. Achieving it requires attention to the art museum as a medium with a unique ability to enrich people's lives in material ways. ■

FOR MORE INFORMATION

American Association of Museums
www.aam-us.org

Association of Art Museum Directors
www.aamd.org

Peabody Essex Museum
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For a bibliography of resources and research related to museum-visitor experience, go to: www.architectureboston.com

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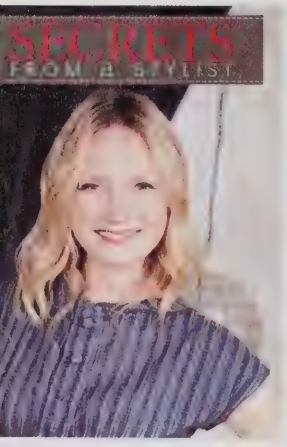






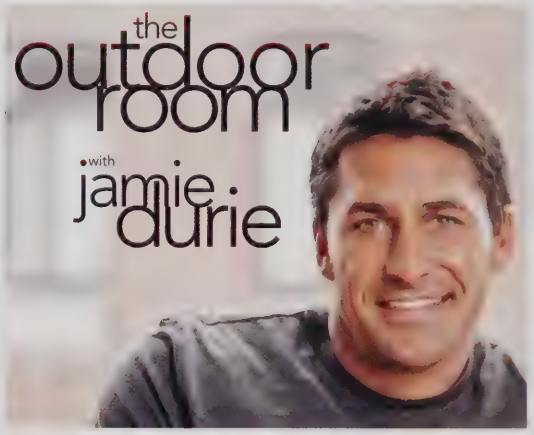


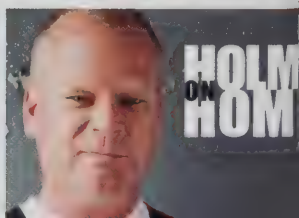
I SAW IT ON HGTV











The most influential source of popular design education is not a school but a television network.

by James McCown

It started a few years ago: Residential architects noticed that clients were referring to products and design concepts that they had seen on a cable television show. HGTV is generally thought of as a "network about decorating," but that might be too facile a way to describe this highly successful broadcast format. It's all real estate, all the time at HGTV, formally known as Home & Garden Television. If we are a society obsessed with residential real estate, then HGTV is our virtual national campfire, a place to gather round and be voyeurs of other people's private abodes. We are observers as they engage in the endless search for bigger, better, and more elaborate places to call home.

HGTV goes beyond mere decorating to expand the notion of what decorating and design are. In HGTV's treatment, design becomes refracted and given completely new cultural grounding. The notion of interior design as a genteel, relatively upper-class pursuit is quickly blown out of the water. Here, design is democratized and diverse. Ladies who lunch in Chanel suits are replaced with machismo men with tattoos and women who are not afraid to get tough to get what they want.

Take one of HGTV's shows, *The Antonio Treatment*. Based in LA, star Antonio Ballatore refers to himself as "not your average designer"—and he's not kidding. He appears more like a repo man than the aristocratic image of the Back Bay or Upper East Side decorator.

"It's about going slick or going home," Ballatore says of his design approach. (In a recent episode, he took a client's existing colorful bedroom and gave it a rustic-cave treatment, complete with thousands of small wooden blocks in various lengths that formed a headboard reminiscent of stalactite.) Ballatore is a design celebrity, not because he has been recognized through the awards and publications that usually anoint the design profession's elite, but because he has won the network's popular *Design Star* competition. Following a formula straight out of *America's Next Top Model* and *American Idol*, a dozen or so designers compete for a chance of starring in their own show; divas and drama queens—male and female—abound. This is design as entertainment.

This is also design as media conglomerate. HGTV's roots may go back to the venerable *This Old House*, started as a shoestring public television series 32 years ago on Boston's WGBH and now something of a conglomerate of its own, having launched spin-off programs and a magazine and now owned by Time Inc.

HGTV formally launched in 1994 and is now owned by Scripps Networks Interactive. It reaches a staggering 99 million households in the United States and is one of cable's top-rated networks; its website, *HGTV.com*, is the leading home-and-garden site, attracting an average of 4 million unique visitors per month. A new site, *HGTVremodels.com*, was recently launched, and a new publication, *HGTV Magazine*, hit the newsstands in October. Scripps Networks Interactive's lifestyle empire is also vast—it owns and operates Food Network, DIY Network, Great American Country, Travel Channel, and Cooking Channel (formerly Fine Living). Scripps Networks Interactive posted second-quarter 2011 revenues of $534 million, up 12 percent from the prior year. So much for suffering in the recession and housing bust.

The *Design Star* participants are in residence at a loft in Manhattan when their "mentor," David Bromstad (winner of the first season), enters with great pomp and announces that the teams are headed to Spring Lake, New Jersey, to redesign a bed-and-breakfast.

"Let's go, designers!" Bromstad commands, as they pile into a van and head west.

It's at this point that a viewer of HGTV begins to realize the network's creative modus operandi. It's all about repetition. After a program breaks for a brief commercial, which is often, we are put back in the scene and given a recapitulation; the pacing is two steps forward and one step back, but it accommodates casual viewing and short attention spans.

We also realize how much "creative merchandising" is being done between the network and sponsors—Shaw Carpets and Sherwin Williams, for example, have their own HGTV brands. You can "shop" a program to buy featured products, and at least one of the stars, Candice Olson, has launched her own product line, including upholstered furniture, fabrics, wallpaper, lighting, and bedding. There's an "HGTV Green Mattress" by Serta and even a proprietary line of software allowing viewers to design their spaces themselves.

James McCown is a design and culture writer in Somerville, Massachusetts.

OPPOSITE AND THIS PAGE
All images courtesy HGTV.





But despite the repetition, despite the obvious commercialism, we stick with it all because the programs deploy an age-old storyteller's technique—the narrative based on suspense: Which house will they choose? Who will get voted off the show? What will it look like? Will they sell the house?

HGTV succeeds because it is about people—perhaps more than it is about design and real estate. Programs are built around strong personalities who often challenge our assumptions, as in the case of Ballatore or Kimberly Lacy, a project manager on *Curb Appeal: On the Block*. Lacy is a sassy, self-confident African-American woman who is not afraid to take on contractors or clients. "There's a lot of testosterone around here," she intones, surrounded by male colleagues at a building site.

But it's the client/participants who capture our voyeuristic interest as we peer into their personal lives and pass judgment on their choices. Just as HGTV draws from a wide pool of talent for *Design Star*—industrial designers, shop owners, and antiques dealers in addition to interior designers and the rare architect—featured couples and families represent a broad demographic mix-and-match (although they seem to age out in the mid-40s). Their circumstances and motivations are varied and sometimes comical—does a young couple really want to buy a vacation home in Barbados with in-laws from both sides?

House Hunters International feeds not just our curiosity about others but also our natural wanderlust. Who doesn't dream of chucking it all and moving to some exotic locale? And *HHI* shows how people of relatively ordinary means can actually afford places like seaside villas in Nicaragua and elegant apartments in Buenos Aires. This is voyeurism to an extreme, as we follow the chosen couple through their rounds, contemplate the wisdom of their decision to move and bet on the probable longevity of their relationship, and then imagine ourselves making the choice along with them: "No, pick the stucco townhouse, not the brick stand-alone!"

For all the frivolous air of many of the programs, some of them do teach basic lessons in design. The comments of *Design Star*'s design panel are often wise and valid; the imperative of form and function working together is repeated constantly. Before-and-after shots underscore

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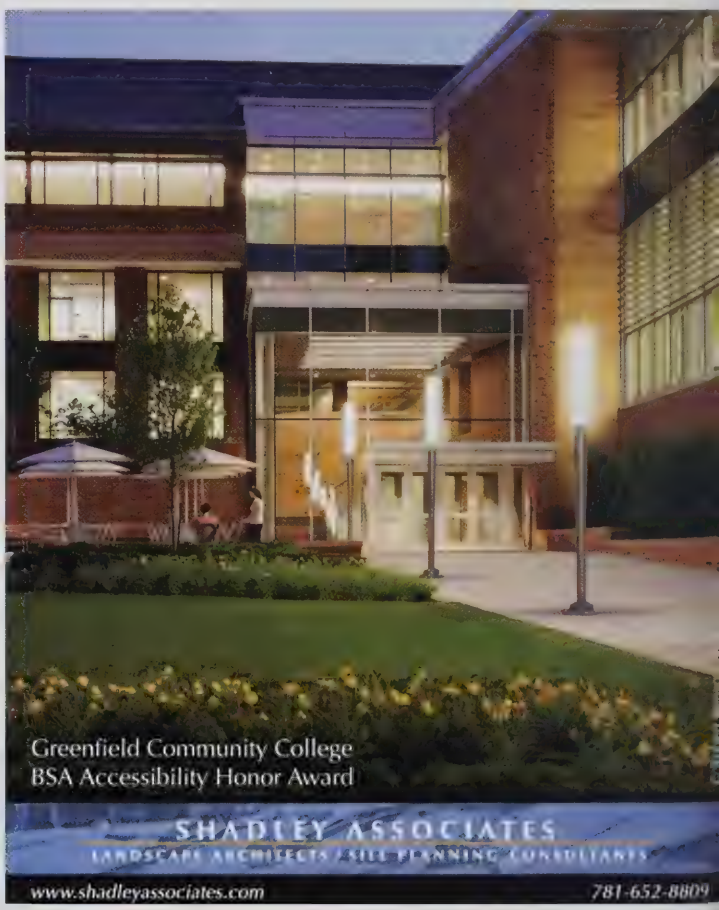
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the transformative power of visual ideas.

But there are other assumptions that are unquestioned, namely that everything needs to be redesigned. Yes, that's the point of the shows, but it would be refreshing—and environmentally responsible—to occasionally hear "we only need to do minimal intervention in these rooms." It is as if the hegemony of granite countertops and stainless-steel appliances is now almost universal. What's actually wrong with the white appliances and Formica countertops? True design creativity could find ways to freshen up spaces without the cost and waste of completely gutting, as if updating Thoreau's dictum of "simplify, simplify" into "reuse, reuse."

For HGTV, design is more than design. The network seems intent on expanding the notion of the human habitat to virtually every sphere of our lives. This, of course, is a major theme in 20th-century design; Le Corbusier's "machine to live in" was meant to fundamentally transform the way in which people of all classes lived. But what's especially noticeable throughout HGTV is how rarely "high design" comes into play—there's hardly a reference to Mies van der Rohe, Marcel Breuer, or any of the rest of the Modernist pantheon, let alone well-known current practitioners. Unsurprisingly absent are the well-known academics who talk about "edge conditions" and "aesthetics and design that transgress Middle American morality."

But let's not forget that TV is a fiction: Everything is accomplished quickly. Experts are unchallenged. Homeowners are always grateful. Collaboration is unknown and unnecessary. And architects are nearly invisible (which some might argue is not a fiction)—a fact that should draw the attention of the profession both as an opportunity and as an omen.

Is it a stretch to compare this frothy entertainment with the design profession's international "starchitect" culture? Yes and no—the David Bromstads revel in their fame and fabulousness, while the Frank Gehrys and Zaha Hadids feign indifference at all the attention they receive. Both feed our endless desire for celebrity.

It all seems to highlight the primacy of design as an intensely personal human endeavor. Who better to do this than HGTV, which has embraced design with gusto—and in the process made it possible for us to observe and critique the redecoration of a Prague apartment while munching popcorn at 2 o'clock in the morning. ■

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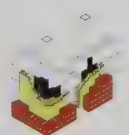
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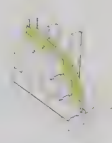
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Mind and Hand: Drawing the Idea

by James Wines



It is often said that Leonardo drew so well because he knew about things: it is truer to say that he knew about things because he drew so well.
—Kenneth Clark

It may seem strange to champion hand drawing today, in view of the universal triumph of digital graphics—especially when every progressive architect in the world seems obsessed with elevating computerized delineation to new heights of illustrative supremacy. At the same time, as the software revolution has increasingly taken precedence, there appears to be a fresh incentive among many architectural students—actually, a kind of quiet revolution—based on a newfound desire to hone their manual skills and learn to draw in the old way.

I have been a long-standing supporter of dual skills, encouraging young designers to maintain equal graphic abilities on paper surfaces and computer desktops. This advocacy is based on a deeply felt conviction that, by focusing exclusively on computer-generated illustration, something conceptually profound is forfeited in the design process.

When electronic mechanisms replace the filtration of idea development through tactile means, the fertile territory of "subliminal accident" is lost. This refers to marginal calligraphy that dribbles off the edge of the paper, the inadvertent congestion of squiggly lines with no apparent meaning, the unwelcome blobs of ink that drop off a pen tip, or the inclusion of seemingly irrelevant references that have nothing to do with initial intentions. On innumerable occasions over the years, I have been the creative beneficiary of my own graphic musings and the chaotic trail of ambiguous images left behind by random charcoal smudges and watercolor washes. In a variety of miraculous ways, this pictorial detritus, hand-drawn on paper without any predetermined architectonic mission, has often become the springboard for new ideas.

Frequently, when watching some seemingly prepubescent computer whiz use software to whip out multidimensional views of a complex structure in a matter of minutes, I feel as though I may be pushing a hopelessly old-fashioned aesthetic ritual. I recall how impressed I was with the photo-fidelity of digital drawing a decade ago, when proficiency in computer rendering was applauded as some kind of transcendental feat. Everything churned out in those days looked too good to be true—and it was. As my eyes became accustomed to sorting out slickness from substance, I gradually acquired a highly refined aptitude for detecting mediocrity (or outright crap) lurking under the pictorial gloss.

Computer proficiency can never match the advantages of the calligraphic aptitude needed to draw really well. This is very different from the conventional capacity to produce photo-like images with great fidelity—a commonplace talent in architecture that is frequently mistaken for genuine drawing. The most noticeable deficit in young designers' ability to draw is their lack of understanding of the complex aesthetic challenges that must first be met for accomplished draftsmanship. These include knowledge of the origins of language, the evolution of calligraphy, the nature of signification, and the abstract dimension that unites positive and negative visual elements on the picture plane. In this context, I am speaking mainly of drawing in its role as a recorder of thought process within the larger goal of building design. But, like the artist's study for a painting or sculpture, the quality of calligraphic underpinnings in the initial sketch is always a decisive factor in determining its ultimate qualification as an aesthetic experience.

The beginnings

The discovery of the Altamira and Lascaux cave paintings (in 1879 and 1940, respectively) confirmed the fact that Paleolithic cultures as far back as 30,000 years ago had mastered the art of drawing and established the foundations for all subsequent graphic selection in the formation of written language. The illustrative factor was certainly part of the purpose of cave art; but those Magdalenian painters also knew that the profundity of visual language resided in its abstract and iconographic elements—in essence, the connections linking inscription and philosophy—apart from any basic reportage intentions. They anticipated not only the development of Egyptian hieroglyphics and Chinese calligraphy thousands of years later but also the signifier/signified basis of linguistics and the role of mind and hand in the evolution of visual ideas.

Historian Andrew Robinson refers to Magdalenian art as "proto-writing," seemingly based on the assumption that Ice Age people did not yet have a legitimate alphabet. On the other hand, there are enough abstract symbols punctuating the cave murals to suggest that these Cro-Magnon painters had already laid major groundwork for the development of written language—as well as all subsequent calligraphic innovation in art and design. In the context of prehistoric times, it was only a small aesthetic and

James Wines is the president of SITE, a multidisciplinary architecture and environmental-art practice in New York City, and a professor of architecture at Penn State University.

OPPOSITE
Gwa Cheon Club (overview rendering) Seoul, South Korea James Wines, pen and ink, 2007 Architect: SITE

linguistic leap to associate the gracefully tapered legs of a bison with all forms of stability and movement in nature. The next logical step was to abstract this fragment of anatomy into a pictographic symbol; refine it into a cuneiform inscription; and, finally, amplify its meaning by phonetic markings and syllabary alphabets.

With progressive logic, the extended legacy of this process evolved into the serviceability of e-mail on one hand and the expressive pathos of Picasso's drawings for *Guernica* on the other. By following a similar route of graphic invention 4,000 years ago, China developed calligraphy to a degree where fragments of the first alphabet still remain a part of contemporary Chinese writing. Similarly, Chinese writing and drawing have remained synonymous skills in the hands of calligraphers. This interface between language development and the aesthetics of drawing is at the core of graphic expression.

You are what you draw

In my view, there is no question that the fluidity of connection between mind and hand determines the quality of the architect you become. It shapes your thinking and, therefore, the kind of firm in which you practice, including the creative level of people with whom you choose to associate. Certainly, a high aptitude in hand drawing influences the character and innovative level of the work you produce.

In 1970, I cofounded SITE; from the beginning, our work has been a fusion of art, architecture, and landscape. The philosophy of the firm is based on a view that communicative content in the building arts can be developed from sources outside the traditions of formalist design; our buildings are frequently interpreted as being about the environment rather than objects sitting in the environment. This approach proposes a narrative function of architecture. It springs directly from the questioning, multilayered, and sometimes-ambivalent process of sketching, as opposed to the limitations imposed by computer-generated abstract shapes—or, more specifically, preprogrammed digital systems for graphic delineation.

A number of my drawings explore the integration of architecture and landscape. As a result, buildings often appear to be consumed by their own environment—or, seen more perversely, as victims of nature's revenge. In other examples, the renderings describe the need for more forested areas, water sources, and urban agriculture in the cityscape. The primary purpose is to explore the integration of architecture with context to




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a degree where it becomes difficult to discern where a building ends and the environment begins. In this way, vegetation, topography, and climatic conditions can become as much a part of the aesthetic/functional fabric of a structure as masonry, glass, and steel.

These drawings are often part of an interactive process that fuses computer graphics with hand drawings as a fluid interface between multimedia and conceptual development. From the incremental stages of source referencing and search-for-idea sketches through design clarification and, finally, renderings for pure aesthetic experience, the calligraphic underpinnings of the design appear in multiple formats and scales. These layers may not be apparent to the casual observer of the completed work, but they form its essence.

I encourage young architects to draw for reasons of idea development as well as for pure pleasure—advising them to follow Picasso's obsessive example: "I draw like other people bite their nails." In his enthusiasm for the power of the hand, the great Spanish artist is also purported to have taken a dim view of the digital revolution by commenting, "Computers are useless. They can only give you answers." Although overstating the case a bit, he correctly prophesized the current revival of interest in hand drawing and the widening acknowledgment that there are conceptual and aesthetic qualities that software, such as Form Z, AutoCAD, and SketchUp, can neither equal nor replace.

When I watch masses of architectural students locked into computer monitors as prosthetic extensions of their bodies and churning out facile simulations of buildings, I recall Baudrillard's eerie assessments of postmodern culture. Particularly resonant are his views of media phenomena—as illusion replacing reality—where substitution ultimately becomes the reality. In a world of simulacra, I find that signs scratched on paper with a pen or pencil have a way of restoring authenticity, as well as validity, value, and symbolic content. As Baudrillard astutely observed, the illusions created by media tend to remove people from the organic and tactile world around them. Retaining this connection between mind and hand seems just as valid now as it was for the cave artists who immortalized the hunt in Altamira and Lascaux. The quest for calligraphic quality is no less relevant as well. It is an objective perfectly described by an anonymous quotation I found recently on the Internet: "We all have at least 100,000 bad drawings inside of us. The sooner we get them out and onto paper, the sooner we'll get to the good ones buried deep within." ■

This essay has b
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THE CITY IS A CANVAS

And yet such seems to be the fate of JR, the 27-year-old French street artist known only by his initials. Seemingly well launched on a career as a street punk at the age of 13, his life changed at 17 when he found a camera left behind on the Paris Métro. Spraying graffiti became less interesting than posting photographs of his fellow graffitimeisters. And then came inspiration and fame: the 2004 project, *Portraits of a Generation*, featuring photographic portraits of disenfranchised immigrant youths from the Paris suburbs—pasted on city walls without permission.

Portraiture allowed JR to put a face on political issues, to make them social issues as well. The *Face2Face* project featured pairings of Israelis and Palestinians; *Women Are Heroes* brought attention to one of the most notorious favelas in Rio de Janeiro. The city is his canvas, and he has found an ample supply around the world: Kenya, Brazil, Liberia, India, Cambodia, Shanghai, Los Angeles. Calling himself a *photograffeur*, he is fiercely protective of his anonymity and continues to work largely by stealth with a trusted team. He rejects corporate sponsorship, funding his projects through sales of books and photos of his installations.

INSTALLATIONS BY JR

JR takes his place among the pantheon of bad boys who have elevated graffiti to "street art": Basquiat, Haring, Banksy, and others. (Shepard Fairey tries too hard to be bad; Boston's Pixnit is a girl.) While building owners, neighborhood activists, and police gang units understandably rail against vandalism and a phenomenon that revels in its illegality, art-world tastemakers have already pushed the underground movement toward the bright light of commercialism.

JR exudes an earnestness that suggests that he is resisting the sell-out. His work is at its best at its most political; but even these projects seem to share the innocence of Edward Steichen's *The Family of Man*, the landmark 1955 exhibition at the Museum of Modern Art representing an age before we became cynical and ironic. No doubt Abercrombie & Fitch ad directors will find inspiration in his work. But so, too, will other artists and, yes, architects, who will see new creative possibilities in walls, rooftops, and entire cityscapes.

—Elizabeth S. Padjen FAIA

RIGHT
Women Are Heroes, Rio de Janeiro, 2008.

All images courtesy JR and Agence VU.

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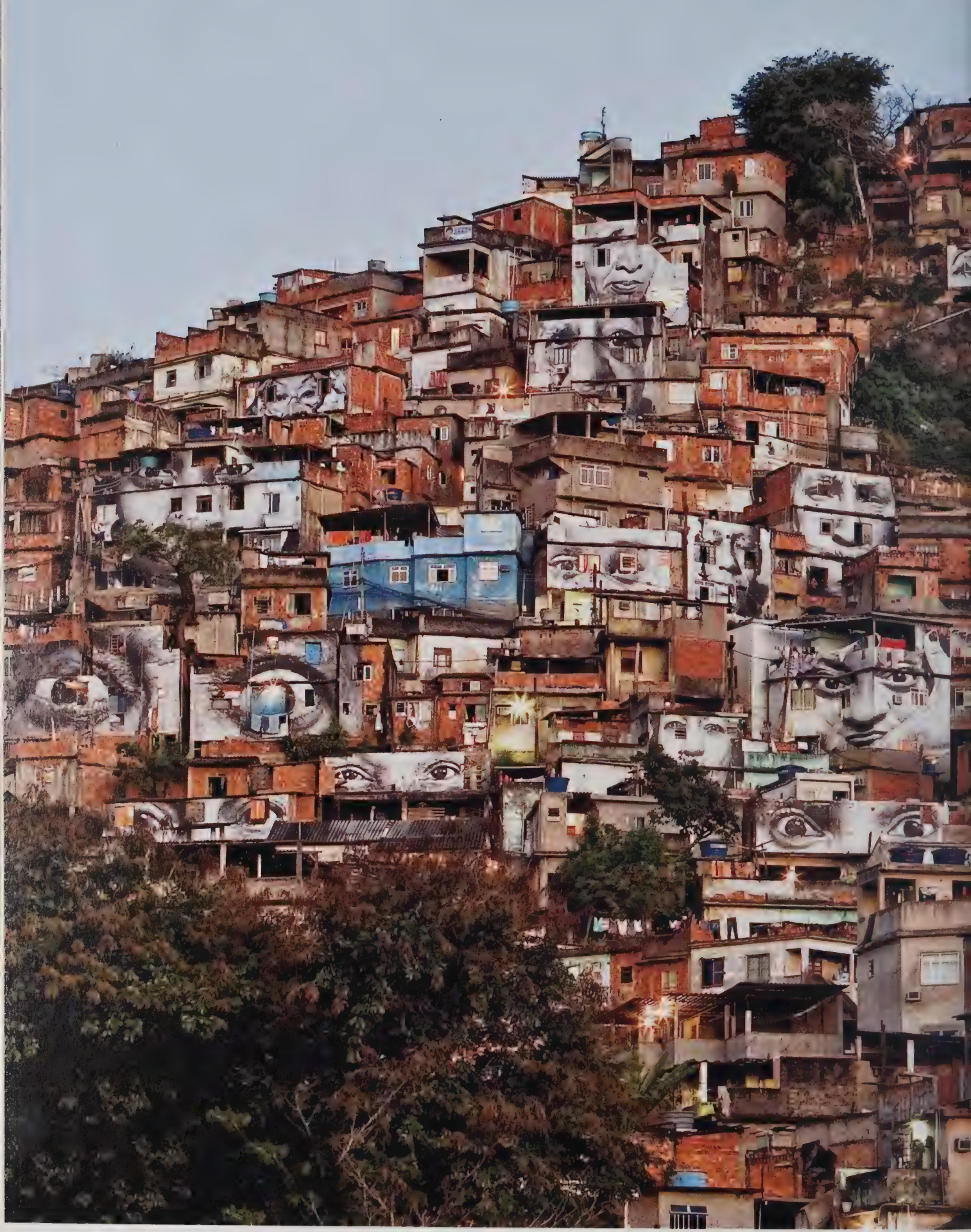
ABOVE
Women Are Heroes,
Rio de Janeiro, 2009

RIGHT
Portrait of a Generation,
Paris, 2004

OPOSITE
Women Are Heroes,
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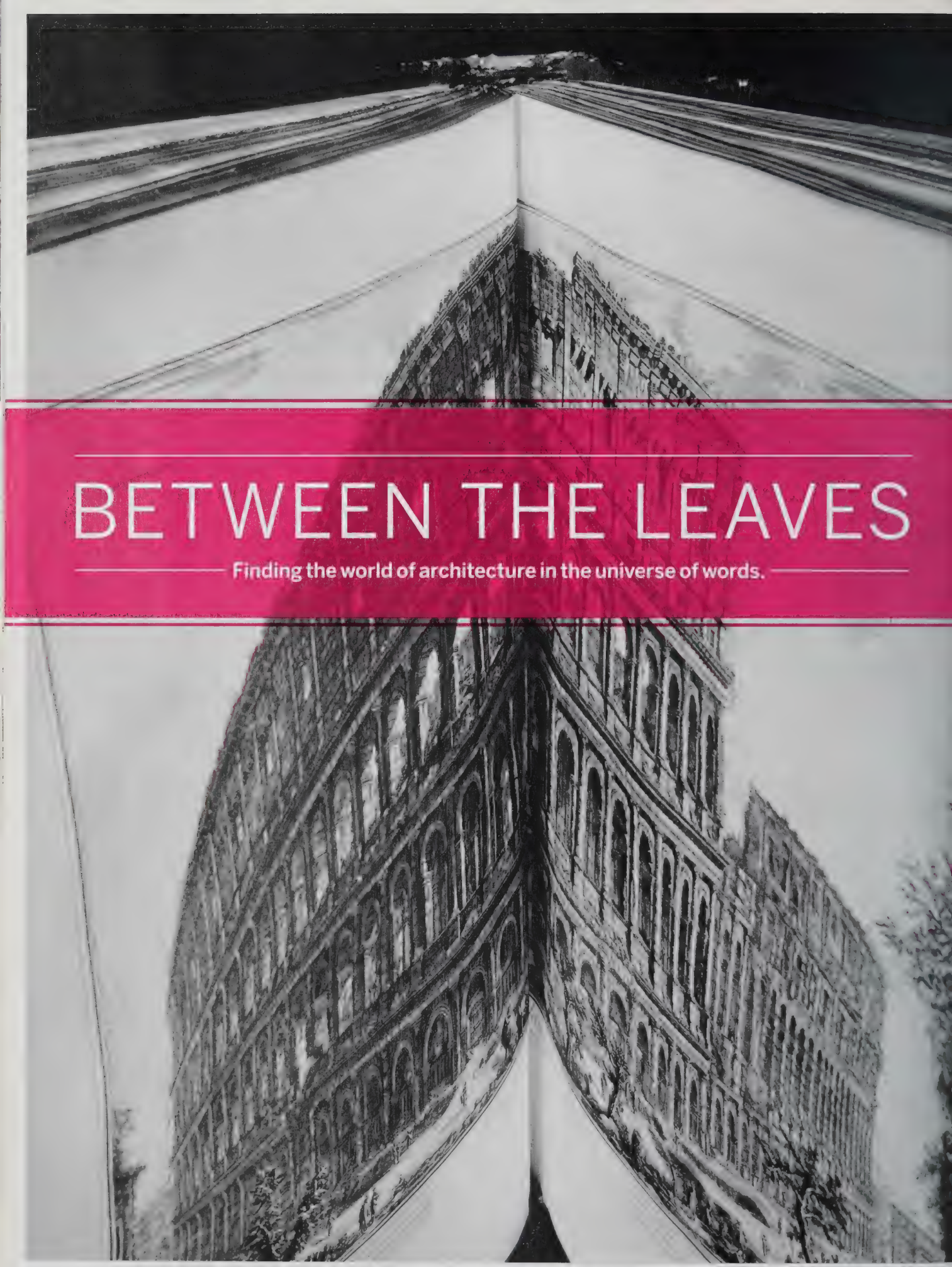
PREVIOUS
Women Are Heroes, Rio de Janeiro, 2008.

ABOVE
Inside Out, Tunisia, 2011.

RIGHT
Women Are Heroes, Liberia, 2008







BETWEEN THE LEAVES

Finding the world of architecture in the universe of words.

WITOLD RYBCZYNSKI talks with JEFF STEIN AIA

Jeff Stein: As an architect, a teacher, and a prolific writer in print and on the Web, you're a master of media. In one of your books, *Looking Around*, you talked about Vitruvius, who described his three criteria for the well-built building: commodity, firmness, and delight. I'm interested, though, in a possible fourth condition: communication. Louis Kahn brought forward the notion that architecture is a building plus an idea.

Witold Rybczynski: Architecture communicates in many different ways; an obvious example is when art is incorporated into a building—a sculpture, say, or frescoes. But I would hesitate to put architecture on the same communicative level as a book or an essay. There was a moment in the Postmodern era in the '70s and '80s when people were very interested in semiotics. But even Umberto Eco, an advocate, had to admit that if a building does communicate, it does so in a very crude way. A building can look impressive or scary or charming, but it does not communicate with the same subtlety or complexity as the written word.

Having said that, architecture has its own expression; it has things to say about proportion and rhythm. When you walk into a grand building, you feel something; but it's not what you feel when you read a book. The building is palpable; there are echoing sounds, light, shadows, textures. Think of a Gothic cathedral.

Jeff Stein: Or Boston City Hall.

Witold Rybczynski: Yes. When you walk into that building, it's not remotely the same experience that you have from looking at photographs or reading about it. It is its own experience, and that has to do with sunlight and materials and all of those things. Imagine the feeling you get when you look up in a Gothic cathedral and see all that stone suspended magically in the air. That is what architecture is about, and I resist the idea that you can reduce it to a metaphor or to a literary message.

Jeff Stein: In addition to your early architecture work, your written work consists of 17 books and over 400 articles, essays, and book reviews. Your work is very much about the stories behind great ideas, and the people who came up with the ideas in the first place. What led you from designing buildings to writing about them?

Witold Rybczynski: When I started my career, I really had no understanding about the profession of architecture. I'd been taught how to be a designer, but I'd been given no preparation for the business of architecture. I enjoyed designing, but at some point, I realized there was more to architecture than just you and a sheet of paper. I didn't know how to get the next client, as H.H. Richardson put it. So I ended up going back to the university, drawn to research rather than teaching. The writing grew out of that.

Jeff Stein: Do you find writing easier than designing?

Witold Rybczynski: Easier than the world of building. When you're a writer, everybody's on your side. Your agent wants to help you find a publisher, your editor wants to help you improve your book, and the bookseller wants to sell your book. Maybe the critic is not on your side, but everybody else is helping you. If you're an architect, you're struggling with everybody, even the client: You're trying to find out what the client really wants and how much money they really want to spend. Architects have to fight to get their vision of the building realized. It's very rare that anybody is trying to help; by and large, architects are on their own.

Jeff Stein: You write not only about individual buildings and people but also about cities and urban life. Cities and communication seem to be closely related concepts. Some would even argue that the value of the city is its ability to facilitate face-to-face communication—which I suppose would make it the greatest communications medium ever invented.

Witold Rybczynski is an architect and the author of 17 books, including most recently *The Biography of a Building: How Robert Sainsbury and Norman Foster Built a Great Museum* (Thames & Hudson, 2011). The architecture critic for *Slate*, he is also the Martin and Margy Meyerson Professor of Urbanism at the University of Pennsylvania.

Jeff Stein AIA is the president of the Cosanti Foundation in Scottsdale, Arizona. He was previously the head of the School of Architecture and dean of the Boston Architectural College.

OPPOSITE
The Coliseum by Piranesi #1 by Abelardo Morell, 1994. Image courtesy Abelardo Morell and Bonni Benrubi Gallery.

Witold Rybczynski: I agree that the main function of cities is to facilitate communication, but I don't think of the city as a medium so much as a setting for various activities, including communication.

Jeff Stein: The city is a theater.

Witold Rybczynski: Yes. It's a backdrop, sometimes a very persuasive and compelling backdrop.

Jeff Stein: And a dynamic one. Cities seem to continually need to accommodate or adjust to changing technologies, especially communications technologies. I'm thinking of the invention of the telegraph, which, for the first time, separated communication from transportation. Suddenly, you could communicate with someone faster than a human could move. It was a revolution. Now, of course, that has morphed into telephone, radio, television, and the Internet. How do you think this shift in communications technology has affected the role of the city?

Witold Rybczynski: It's significantly changed the importance of big cities. For a long time, the big city was the only place where you could meet certain kinds of people, the only place that offered many kinds of opportunities; so going to a big city became an important moment in many people's lives. But I don't think that's true anymore. If you like Boston, you go to Boston; but no one *has* to go to Boston. You can go to a small city, which would have been unthinkable a hundred years ago.

When you're a writer, everybody's on your side. If you're an architect, you're struggling with everybody.
—*Witold Rybczynski*

The specialness of certain cities is still visible. New York City continues to dominate some industries, such as book publishing and finance. But in fact, we don't need a lot of big cities any more. We don't need a lot of Bostons and San Franciscos. The majority of Americans are not yearning to live in big cities, which is why today medium-size cities collectively claim more residents than do the big cities.

Jeff Stein: And now, with communication technologies, it doesn't really matter so much where you are.

Witold Rybczynski: It matters less. I won't argue that living in a medium-size city is just like living in New York, but it does offer many of the urban advantages. And for many people, that's sufficient.

Jeff Stein: And in many ways, the Internet makes that possible. Your first book appeared in 1980, before most of us owned a computer and well before the Web. Now you write for both old and new media platforms. How is writing a book different from your work for *Slate*?

Witold Rybczynski: A book has to remain meaningful for a longer period of time. For me, writing—whether a book or a magazine essay or a blog—is a way of exploring a subject; I don't really know what it's about when I start.

Jeff Stein: Your books are not coffee-table books: They generally don't have a lot of illustrations. In contrast, your online pieces for *Slate* tend to include lots of photographs and even slideshows. The Web is simply a more visual medium. Has it affected your thinking about books?

Witold Rybczynski: I initially resisted using illustrations in my books, and I think I was wrong to do so. I believed that one ought to be able to write about architecture without including pictures. But later, I realized that the more ways you have of communicating, the better—whether it's a caption, a footnote, or a photograph.

The great thing about *Slate* is that digital illustrations are actually better than book illustrations in terms of quality. And they're quite large when displayed on a screen—larger than illustrations in most books and magazines. So online slideshows are a good way to illustrate buildings. And even though the captions and essays are necessarily brief, they work well side by side with the images. You can do things with that format that are harder to do in a book. So it's a satisfying medium.

Jeff Stein: Are you conscious of trying to entertain when you write?

Witold Rybczynski: Yes. You have to get the reader to turn the page or click to the next screen. If the writing is tedious or somehow readers get swamped with too much information, you lose them.

Jeff Stein: Your new book is *The Biography of a Building: How Robert Sainsbury and Norman Foster Built a Great Museum*—which certainly keeps the reader engaged. As I read it, I thought that a book that describes a whole process so thoroughly might serve not only as a document about this building but also as a way for



ABOVE
Le Antichita Romane by Piranesi #1 by Abelardo Morell, 1994. Image courtesy Abelardo Morell and Bonni Benrubi Gallery.

architects to think about other buildings and their own work. But by the time I finished, I felt that we're never going to see another process like this again, in part because the technology of making architecture is so different and in part because financing mechanisms are so different. Things happen much more quickly.

Witold Rybczynski: That's true, although the Sainsbury Centre is not a typical building; but then the circumstances of achieving great architecture often involve uncommon conditions.

Jeff Stein: What attracted you to the Sainsbury story?

Witold Rybczynski: Partly the fact that most of the people involved were still alive; it wasn't just history. And of course, the Sainsbury Centre is a great building by a young architect who became a great architect. The book isn't simply about the process. It explores the question: How do you produce something exceptional? Remember that the Sainsbury Centre opened in 1978; Foster had received the commission four years earlier when he was just 38. The Sainsbury Centre predates the great museum building boom. It's absolutely unprepossessing, and it's not trying to impress you with anything. It just sits there, this huge white shed, very quiet. Nobody would build a museum like that today—including Foster, I suspect.

Jeff Stein: Certainly his new wing at the Museum of Fine Arts in Boston is not that.

Witold Rybczynski: It really was a different time. The whole development of museums went in a very different direction after that.

Jeff Stein: There's a purity to the Sainsbury Centre that would be hard to replicate now.

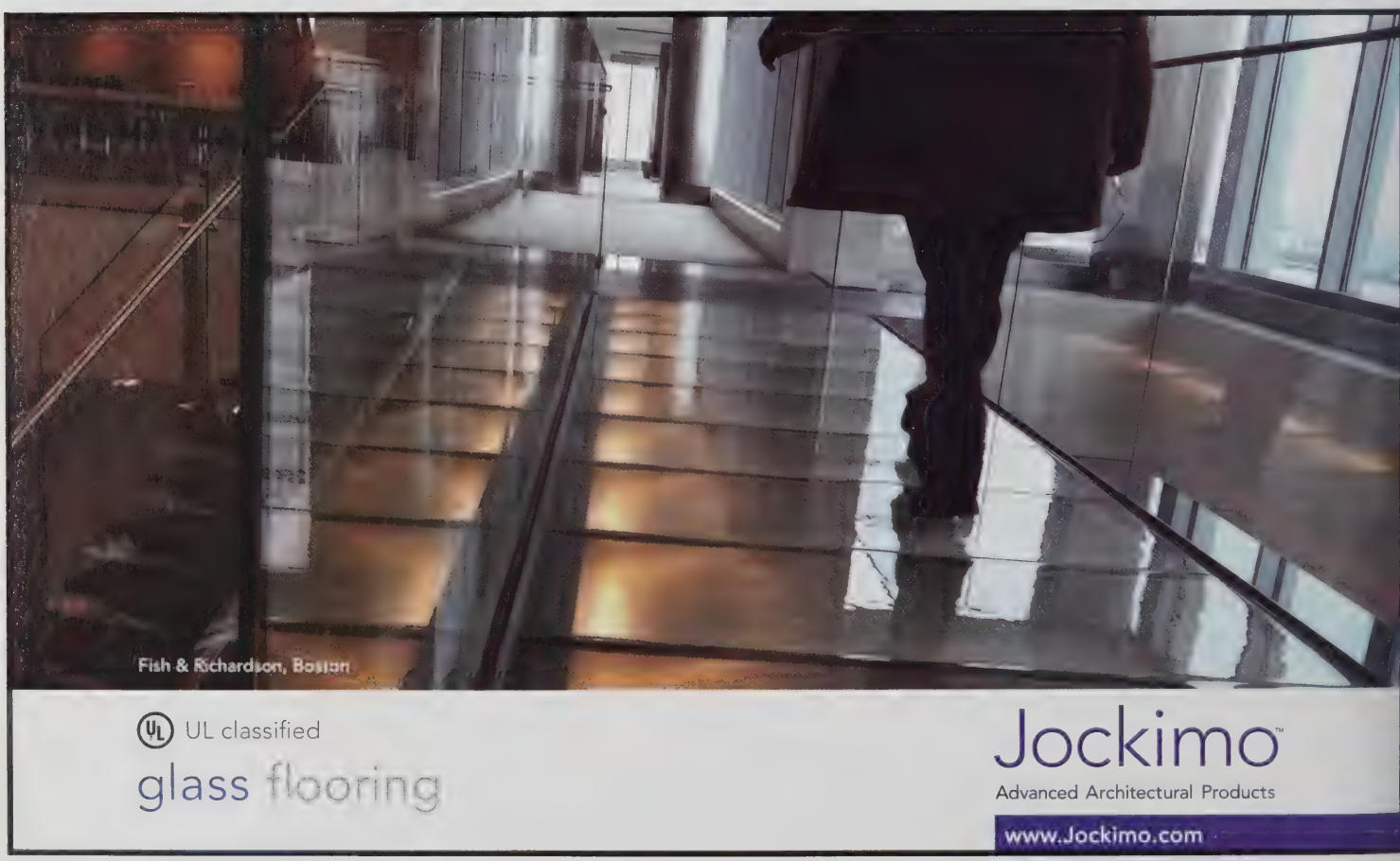
Witold Rybczynski: Yes. Foster's office did everything, including all the working drawings. Foster already had mechanical engineers on his staff and had worked with the structural engineer for a decade. It wasn't a case of developing a design and then having somebody else figure out how to build it. It was this group of young people doing a rather unorthodox building, working out the problems as they developed. And it's still a very striking building. It hasn't aged aesthetically at all.

Jeff Stein: You write that it was never a fashionable building, and so it's still not unfashionable.

Witold Rybczynski: People understood immediately that it was an important building, but one of the negative criticisms in the prevailing Postmodern climate of the time was, "Surely there's more to architecture than this; there's nothing here; it's a warehouse." Foster had ignored everything that was going on in Postmodernism.

Jeff Stein: It seems to me that much of your writing has been about process.

Witold Rybczynski: I've actually written three books about the making of architecture. The first one was about my own house [*The Most Beautiful House in the World*]. That was easier, in a sense, because it was about choices and why and how I made decisions. Then, with the landscape architect Laurie Olin, I wrote a book titled *Vizcaya*, about a grand villa in Miami that was built 100 years ago; Laurie wrote about the garden, and I wrote about the house. Vizcaya was a very interesting, unusual project including a client who was very involved, a young architect, a Colombian landscape architect, and a Beaux-Arts painter who functioned as kind of artistic impresario and brought the whole thing together. After that, I wrote *Last Harvest*, which, although not exactly about architecture, followed a land-development process, showing how a new planned community actually unfolds.



Jeff Stein: Is part of your success as a writer due to your natural curiosity? That you look at subjects like the Sainsbury Centre and start to ask questions?

Witold Rybczynski: It's certainly what compels me to write. I usually start my books with a question, and I try to answer the question in a way that keeps me writing.

Jeff Stein: And as long as there are curious writers and curious readers, we will have books—whether paper or electronic.

Witold Rybczynski: For me, writing for the Internet is still writing. I put just as much work into it, including editing and fact checking. It's a bit shorter; otherwise, there's not much difference. All the people I work with at *Slate* are in their 20s, but they're no different from the editors I used to work with at *The Atlantic* or *The New Yorker* years ago. They're just as serious about the writing.

Let me put it a different way: When I wrote a book about Palladio [*The Perfect House*], at one point I wanted to see his drawings. I visited the collection in the library at the RIBA [Royal Institute of British Architects] in London. They're little sketches, in ink rather than pencil, but otherwise they could have been done yesterday. You can see him trying to work out a plan. So in a sense you can watch the architect working. Amazing—500 years old, yet completely familiar.

And when Laurie Olin and I were working on *Vizcaya*, we found working drawings for the garden—they were blueprints that somebody had then drawn over. You could actually see how the designer was working things out by looking at these drawings. And Laurie observed, "We're probably the last generation that will understand these documents because people don't make these kinds of drawings any more."

The business of architecture has changed, of course, but in some ways it hasn't. With computers, you don't necessarily make sketches in the same way. So it's possible that drawings like these will one day seem very odd, almost like hieroglyphics. I hope not. Similarly, writers may not be producing text or publishing in the same way. But I suspect that, although the publishing industry will be very different, what writers explore will remain the same. ■



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Books

Visual Complexity: Mapping Patterns of Information
Manuel Lima
Princeton Architectural Press, 2011

Pie charts, line graphs, bar charts: For the last 200 years, since their invention by Scottish economist William Playfair, this small set of tools has allowed us to turn data into visualizations. That began to change in 1982, when author and former Yale professor Edward Tufte brought popular attention to the field of data visualization with his book *The Visual Display of Quantitative Information*, best known for its impressive range of examples including a maplike diagram depicting the tragic story of Napoleon's invasion of Russia. In recent years, a combination of new technologies and the Web's insatiable thirst for visual communication have created an explosion in the field and an accompanying avalanche of new books, magazines, and blogs devoted to the topic.

One of the first blogs, Manuel Lima's popular *Visualcomplexity.com*, features a searchable archive of images focused specifically on network visualizations. Network visualization is a specific type of information graphic that aspires to display not only data but also connections and relationships between different pieces of information. Examples range from Jer Thorp's map of flight activity based on Twitter users posting the phrase "just landed in" to Mark Lombardi's attempt to illustrate financial and political fraud among power brokers such as the CIA, the Mafia, and the Bush family. Not surprisingly, these kinds of visualizations have gained new relevance as networks have become an everyday part of our lives, thanks to the Internet, cellular devices, and social media. Lima, now a senior user experience designer at Microsoft's Bing and former TED speaker, has recently expanded his blog into a new book that includes his well-curated collection of examples, now given deeper context by providing historical background, best practices, and critical essays by contributors.

The book strikes a balance between form and function. The images are large and striking, and are produced at a much higher resolution than those on Lima's website. The image captions provide insights into the graphics as well as source information. Surprisingly—to me at least—the book is not formatted as an archive of examples but as a narrative that includes the historic development of this type of visualization, recommendations for creating effective network graphics, and an attempt to organize the charts into several distinct typologies. Essays by Nathan Yau, Andrew Vande Moere, Christopher Kirwan, and David McConville speculate about the value of network visualizations in the future, as technology and its impact on daily life evolve.

The wide range of examples alone—and accompanying attribution information—make this book an excellent resource for designers. But the author's thorough history and the gorgeous images will likely appeal to nondesigners, too, and provide them with a well-rounded introduction to this emerging field.



Ryan Sullivan is the principal of Paste in Place, an information design studio in Portland, Orgeon, and a frequent contributor to *ArchitectureBoston*.

The Urban Spectator: American Concept-Cities from Kodak to Google
Eric Gordon
University Press of New England, 2010

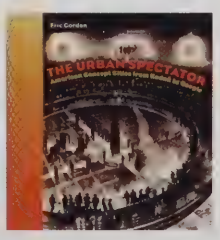
For many architects, there's nothing more compelling than the city. But how do we see it? Why do we picture it the way we do?

The image of the city, Eric Gordon argues, is the city: Many of us know cities through our visual understanding of them, a point made by MIT planner Kevin Lynch and others 40 years ago. Visual representations serve to manage experiences and let us reconcile the complicated flux of urban life so we can catalogue, remember, map, and know urban experience as our own.

The book's somewhat opaque title borrows a phrase from Michel de Certeau's *The Practice of Everyday Life*. The concept-city is a hybrid of the real and the mediated, where commodified images prompt our interactions with the physical present.

Nowhere is this more true than in America. Here, the city's lack of old-world context and its coming of age alongside technological advances in photography and cinema made it especially dependent on image making and image taking, "a construct that could only be manufactured through possessive spectatorship."

Whether or not they fancy the intellectual frosting



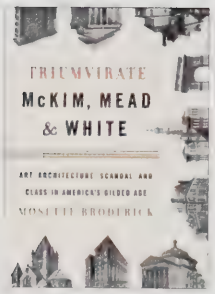
Ian Baldwin is an architect and writer in Providence.

of Gordon's thesis (the resonance of which decreases in direct proportion to the fame of the city one inhabits), keen readers will find several worthwhile layers of urban history.

Gordon begins with the compelling tale of photography's central role in publicizing the 1893 World's Columbian Exposition in Chicago. (The fair's official photographers battled amateurs armed with the new Kodak camera, introduced just five years earlier.) The White City was an idealized quasi-urban composition explicitly designed for its own images, projecting through space and time an architectural vision greatly exceeding the six-month life of the buildings themselves.

The next century brought the first films, or "actualities," which captured and replayed on screen the speed and commotion of subways, trains, and crowded streets to rapt audiences; the contemporaneous rise of Times Square's electric "sky signs" established a form of mass entertainment based on the shared experience of urban spectacle. From there, *The Urban Spectator* switches to more familiar scholarly narratives: New York futurism from Hugh Ferriss and the 1939 World's Fair, urban renewal and its early critics, and the urbanism of nostalgia and commerce at Faneuil Hall.

The closing chapter's attempt to fuse Hollywood and the Web into a "database city" seems surprisingly musty for a book published only last year. If Gordon's argument is correct, then it is the mobile Web and embedded computing, not Web 2.0 and social networking, that matters. The arrival of GPS, real-time mapping, and augmented reality on pocket-sized smartphones threatens to make "possessive spectatorship" meaningless in its ubiquity. As continual feeds of contextual data and the ever-present ability to communicate and record chip away at our dependence on the singular image for urban meaning, a new urban spectator emerges, as liberated and as novel as the Kodak tourists of 1893.



Matthew J. Kiefer is a land-use attorney at Goulston & Storrs in Boston. He teaches in the urban-planning program at the Harvard Graduate School of Design.

Triumvirate: McKim, Mead & White—Art, Architecture, Scandal, and Class in America's Gilded Age
Mosette Broderick
Knopf, 2010

It is tempting to view architecture through the lens of its towering practitioners, and it's hard to conjure two more dissimilar ones than Charles McKim and Stanford White. McKim, the son of Quaker abolitionists, was trained at the École des Beaux-Arts and became a pillar of the profession. White, a self-taught roué, died as flamboyantly as he lived—shot dead at the popular roof garden of his breakthrough work, Madison Square Garden, by the obsessed husband of a showgirl White had seduced when she was 16.

As the title suggests, Mosette Broderick, an architectural historian at New York University, has attempted a genre-bending work: part social history, part architectural history, and part biography. Her depiction of the late-19th-century social milieu that nurtured the firm—indeed, the architecture profession itself—is as important to understanding her subjects as their biographies or stylistic influences.

McKim and White met in 1870, in the office of H.H. Richardson, the "starchitect" of the day. Within the decade, White joined McKim and the diligent, nearly invisible William Mead to form the triad that spoke the design language of the Gilded Age more fluently than any other. They fashioned this language from European precedents—relying on occasional overseas travel but mostly on pattern books, photographs, and talented assistants—and established architecture as the dominant medium for expressing social aspiration.

At first they crafted "picturesque" summer houses in wood. Soon, they were synthesizing Italian Renaissance idioms in stone for major commissions in New York and Boston. Though not stylistic innovators—the age didn't want that—they were early adopters of central heating, structural steel, elevators, and plate glass.

The sober, even depressive McKim helped Daniel Burnham plan the 1893 Columbian Exposition and designed iconic buildings, from the Boston Public Library (since named after him) to Pennsylvania Station (demolished only 50 years after it was dedicated). He became the president of the fledgling AIA. He mastered form and volume, sometimes with an almost archaeological severity.

The more colorful White was in steady demand, despite erratic work habits, for the Fifth Avenue mansions and private clubs of the captains of commerce. He brought the same mastery of surface and fluidity of style to their edifices that John Singer Sargent brought to their portraits. Unlike today's newly wealthy, who are mostly design-forward, White's newly rich clients craved a venerable Old World image. This often contrasted starkly with the business and personal upheaval in their lives—it's striking how many of White's grand houses were barely occupied by his clients before being sold off or torn down.

At 515 pages, the book has the feel of a work of total immersion—a meandering skein of vignettes, without a central narrative arc or a new perspective about the significance of the firm's work. It's juicy social history with great architecture as its subtext.

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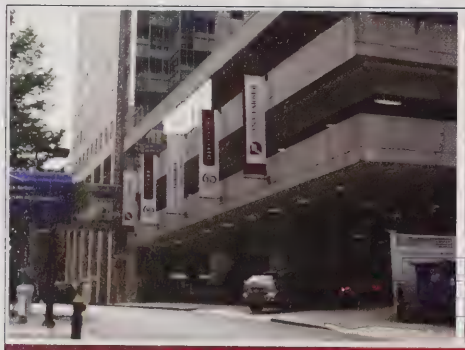
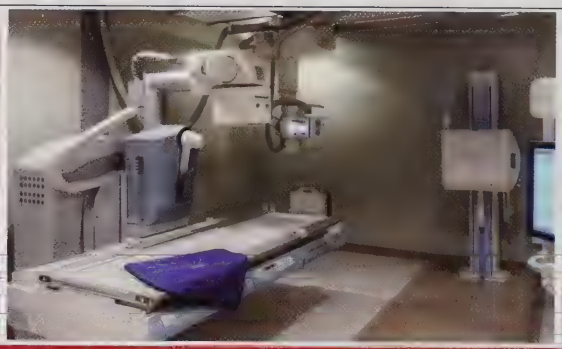
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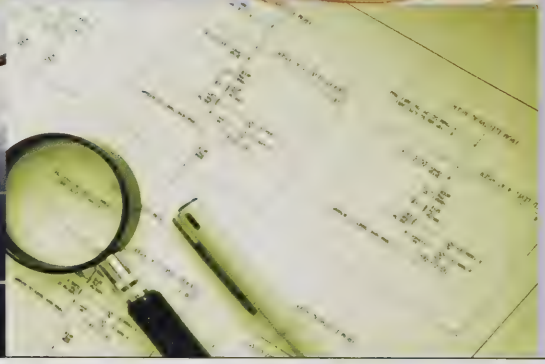
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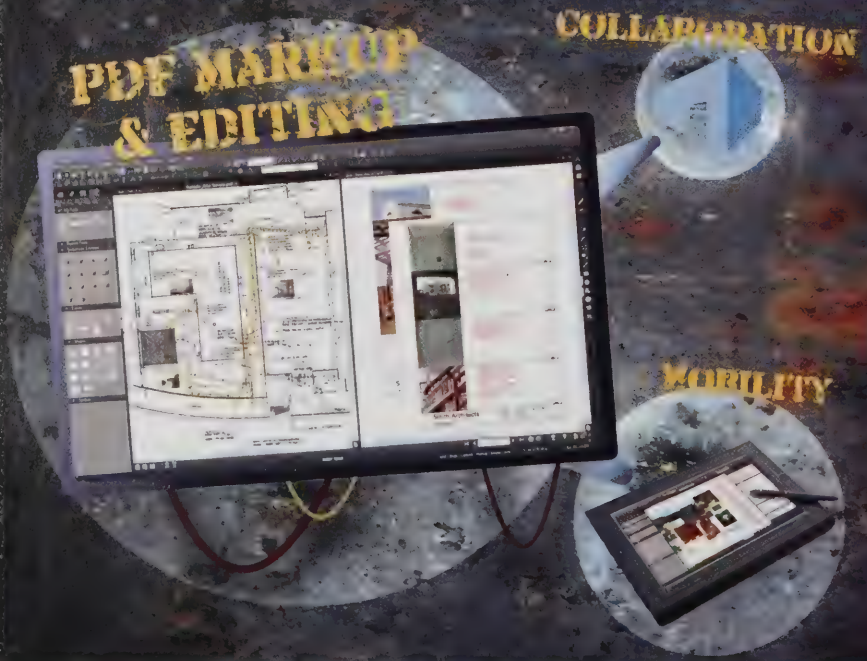
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The Digital Object

Andrzej Zarzycki is an assistant professor in the College of Architecture and Design at New Jersey Institute of Technology.



RIGHT
"Talking Carl," created by Yann Le Coroller. Image courtesy the Museum of Modern Art.

We are used to objects that respond to our actions. When crossing a street, we push a button and a green light appears. The light may say "walk," but it actually does not tell us anything more than that we have just pressed the button. The system does not check for moving cars or verify our safety; it simply announces our intention of crossing the street to others involved in the action and relies on their intelligence to accomplish it.

With contemporary electronic media, by contrast, we expect everyday objects not only to talk to us but also to interact, to manifest basic autonomy and, ideally, to behave like intelligent entities. We expect objects to communicate in meaningful and emotionally engaging ways, to entertain and care for us. With this in mind, I visited the recent *Talk to Me* exhibition at the Museum of Modern Art (MoMA) in New York City.

A "Talking Carl" installation strategically placed near the entrance set the tone. Talking Carl is a highly successful Android and iPhone app in which an anthropomorphic red bloblike character reacts with giggles and bodily expressions to touches (via touch screen). It repeats what we say to it using silly voices. At the exhibition, a small crowd was hanging around for a chance to play with Talking Carl. Kids were not the only ones waiting patiently, although they showed the most endurance.

The scene highlighted a unique quality of exhibitions such as *Talk to Me* as well as many of the digital objects they feature: They are cross-generational. They engage members of a broad section of society through intuitive interfaces and emotional content. This kind of engagement is filtering into the ways we structure and deliver knowledge, and ultimately makes the authoring and consumption of culture more democratic. We all have something to say and add to our society—a premise of the Web 2.0 paradigm is crowdsourcing and collective wisdom.

This points to our new expectation of what an object is and does. Whereas the Industrial Revolution empowered us with an endless number of tools, each with a discrete purpose, the present digital framework reverses this trend and dissolves objects into a ubiquitous and universal cloud. What we call objects will not necessarily be physical objects. The object's emotional interface (character), not its momentary function (purpose), becomes the critical differentiator.

But however ubiquitous these objects might already be, they seem to represent a new reality with which we are not yet entirely comfortable. Why else would we visit museums to interact with objects that are already present in our everyday lives? Their very novelty allows us to objectify the object, pulling it from its context. Digital objects and art installations become tweet-size presentations on video screens or wall posters. In the MoMA exhibition, the "SMSlingshot" by VR/Urban—a highly interactive, urban-scale, guerrilla art project—is showcased as a framed wall display of a slingshot accompanied by a video recording. The substitute feels like dining off a photograph of a meal: no taste, no scent, no food, just an image. Interactivity—a new existential dimension—is not reducible. It cannot be substituted or expressed through video footage or text; it must be experienced in the first person. Curators often miss this essential quality of digital media, but so does much of our society, which continues to misinterpret activities such as gaming as purely entertaining phenomena.

Objects do talk, but we still don't fully understand what they are really telling us. In their 1995 book *The Axemaker's Gift*, James Burke and Robert Ornstein described the history of our civilization as a constant shaping of tools by people, and a consequential shaping of people and the way we think by the tools we create. This proposition is still relevant today and directly applies to the current debate about digital media. Our new relationship with objects—either physical or dematerialized, but definitely responsive and intelligent—will have a profound impact on human culture and on our place within it. ■

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